DALLAS COLLEGE

Making the Case: Utilizing LODES Data to Support Community Colleges

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Presentation Outline

- Situating Dallas College within DFW Economy
- Case Studies
  - Enhancing Campus Planning
  - Grant Development
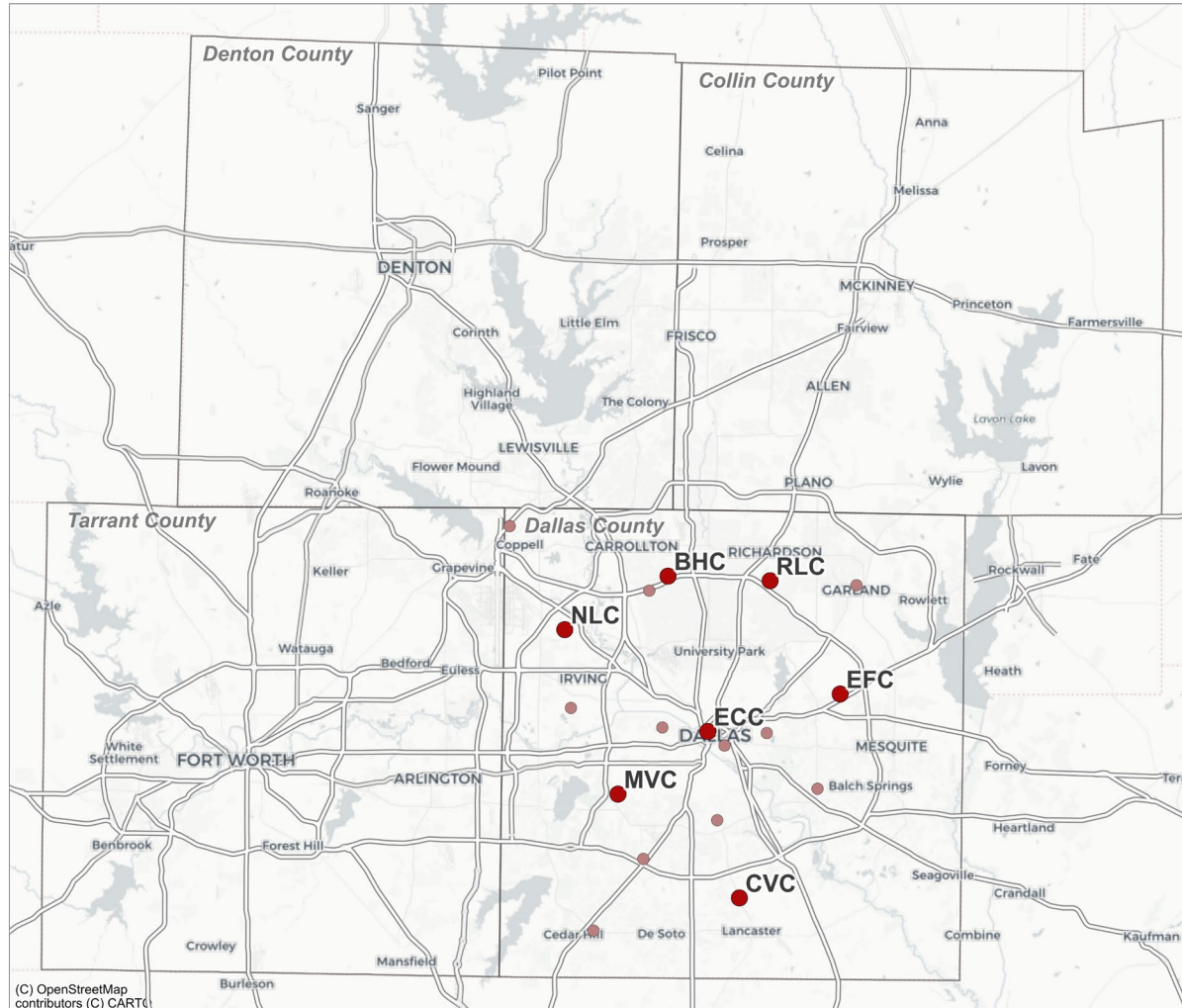 - Community Partnerships
- Technical Overview

Situating Dallas College: Relatable Challenges

Dallas College and Dallas-Ft. Worth MSA

19 locations across Dallas County (7 main campuses and 12 community campuses)

84.5% of DFW MSA jobs are in these 4 counties – Denton, Collin, Tarrant, and Dallas
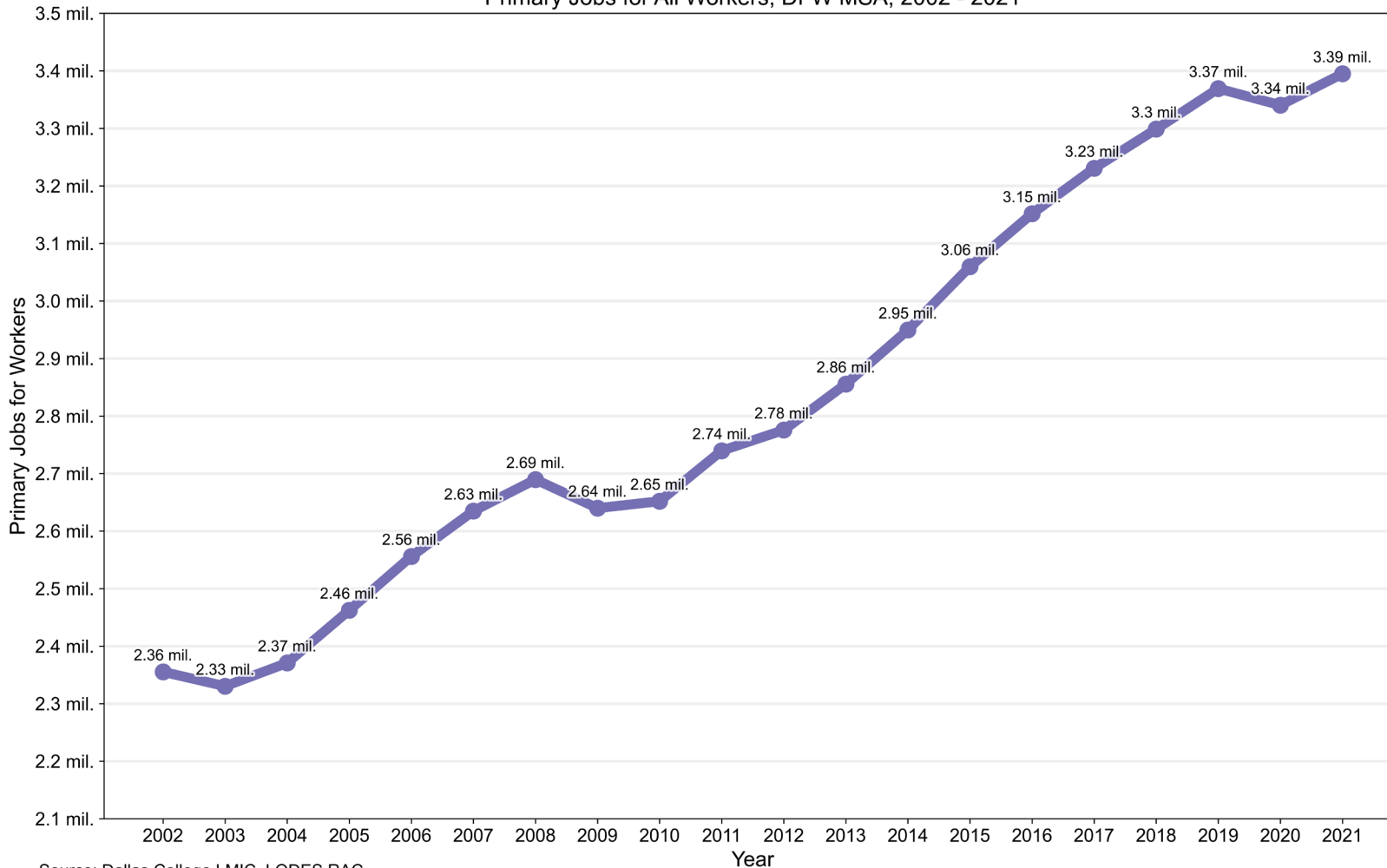
$688.9 billion GDP in DFW MSA in 2022

Rapid Regional Growth

Primary Jobs for All Workers, DFW MSA, 2002 - 2021

+143% total workforce growth 2002-2021
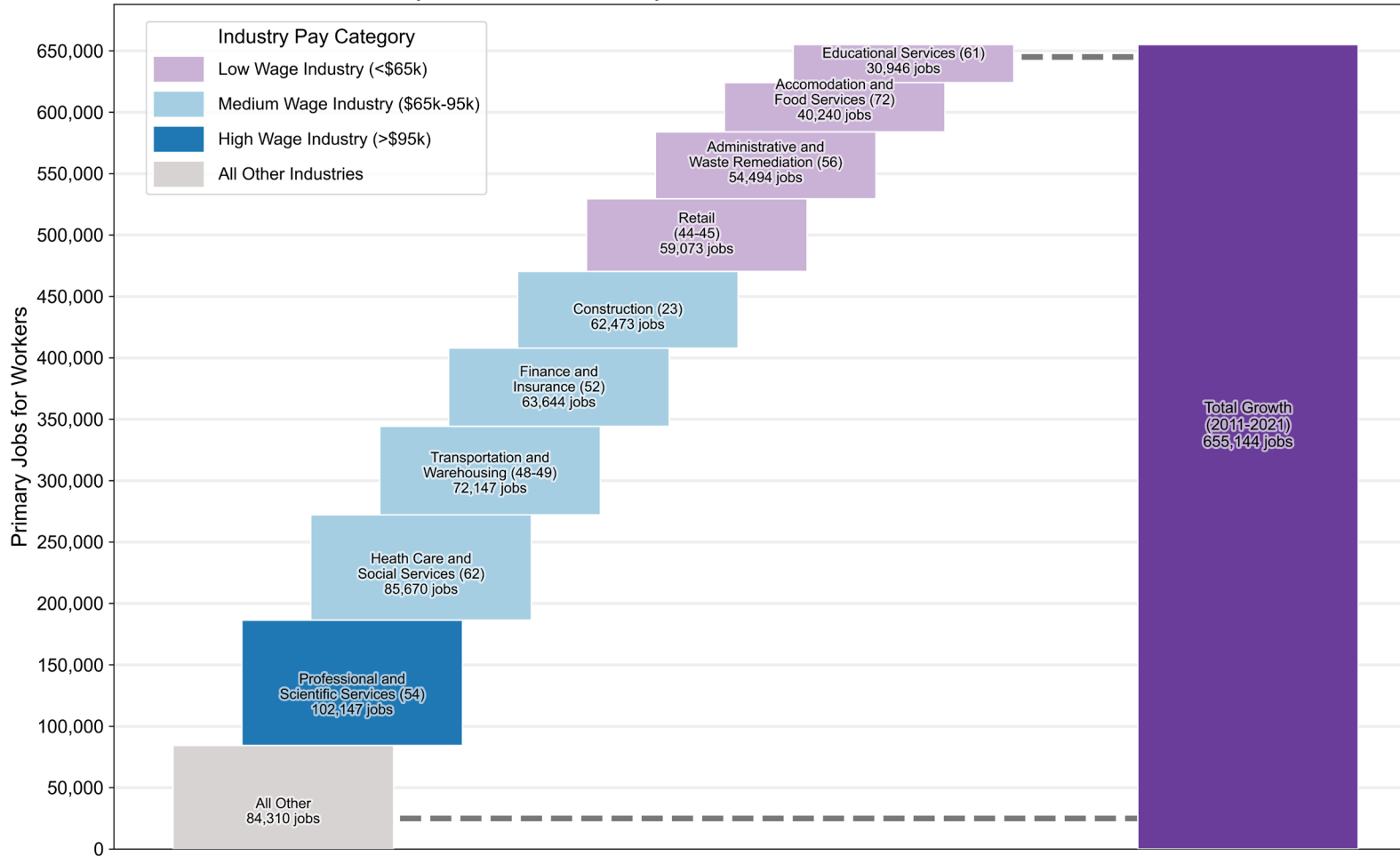
+1.9% average annual growth

12,421 primary jobs for workers added per year, or

34 per day every day for 19 years!

Source: Dallas College LMIC, LODES RAC

Industry-Level Growth Patterns

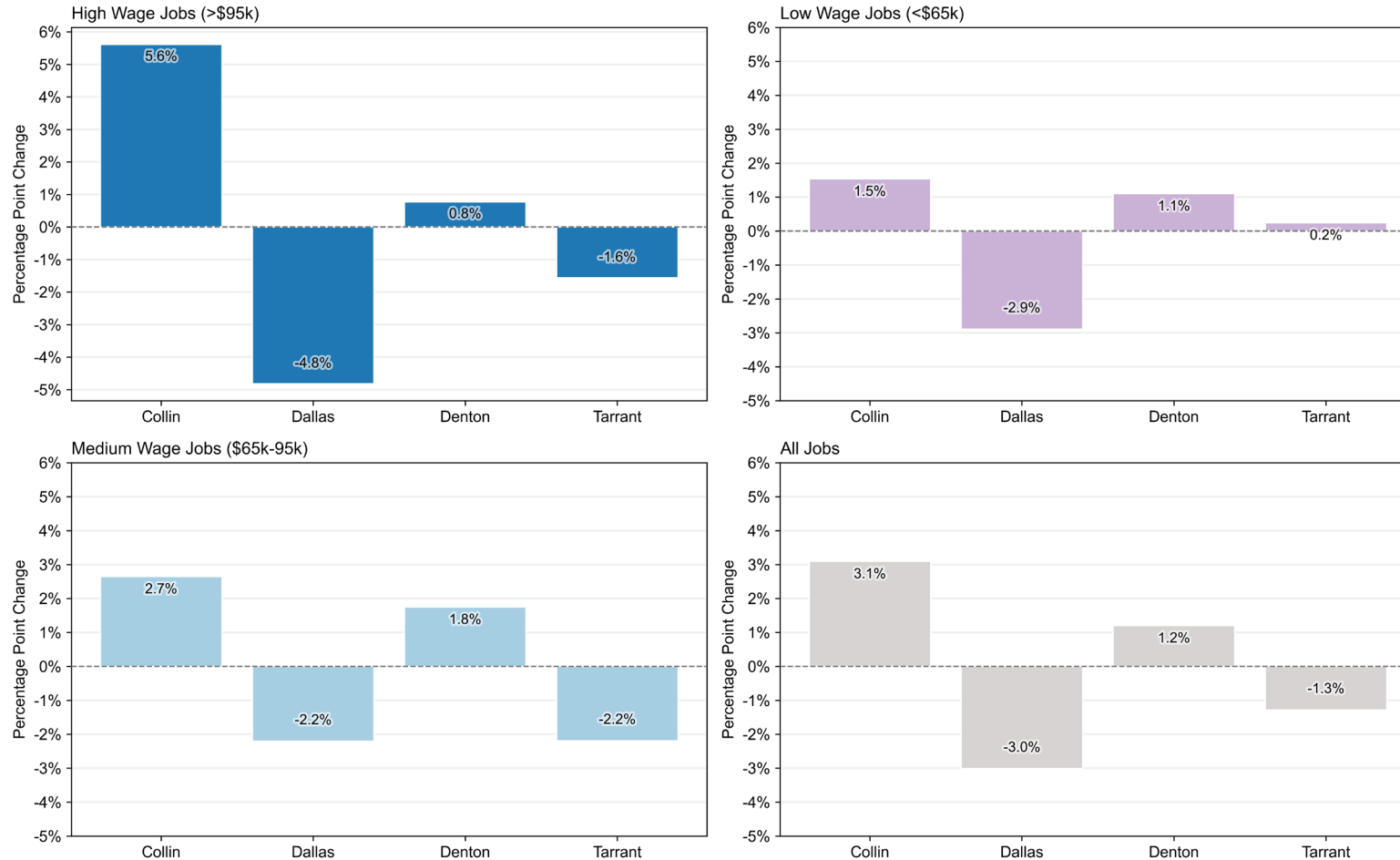Industry Breakdown for Primary Jobs Added for All Workers, DFW MSA, 2011-2021

87% of total growth from 2011-2021 accounted for by top 9 industries

58% of growth in professional and scientific services, health care, transportation and warehousing, finance and insurance, and construction

Source: Dallas College LMIC, LODES RAC, Lightcast

Geographic Dispersion of Employment

Change in Regional Share of Primary Jobs by County, 2011-2021

High Wage Jobs (>$95k)

County	Percentage Point Change
Collin	5.6%
Dallas	-4.8%
Denton	0.8%
Tarrant	-1.6%

Low Wage Jobs (<$65k)

County	Percentage Point Change
Collin	1.5%
Dallas	-2.9%
Denton	1.1%
Tarrant	0.2%

Medium Wage Jobs ($65k-95k)

County	Percentage Point Change
Collin	2.7%
Dallas	-2.2%
Denton	1.8%
Tarrant	-2.2%

All Jobs

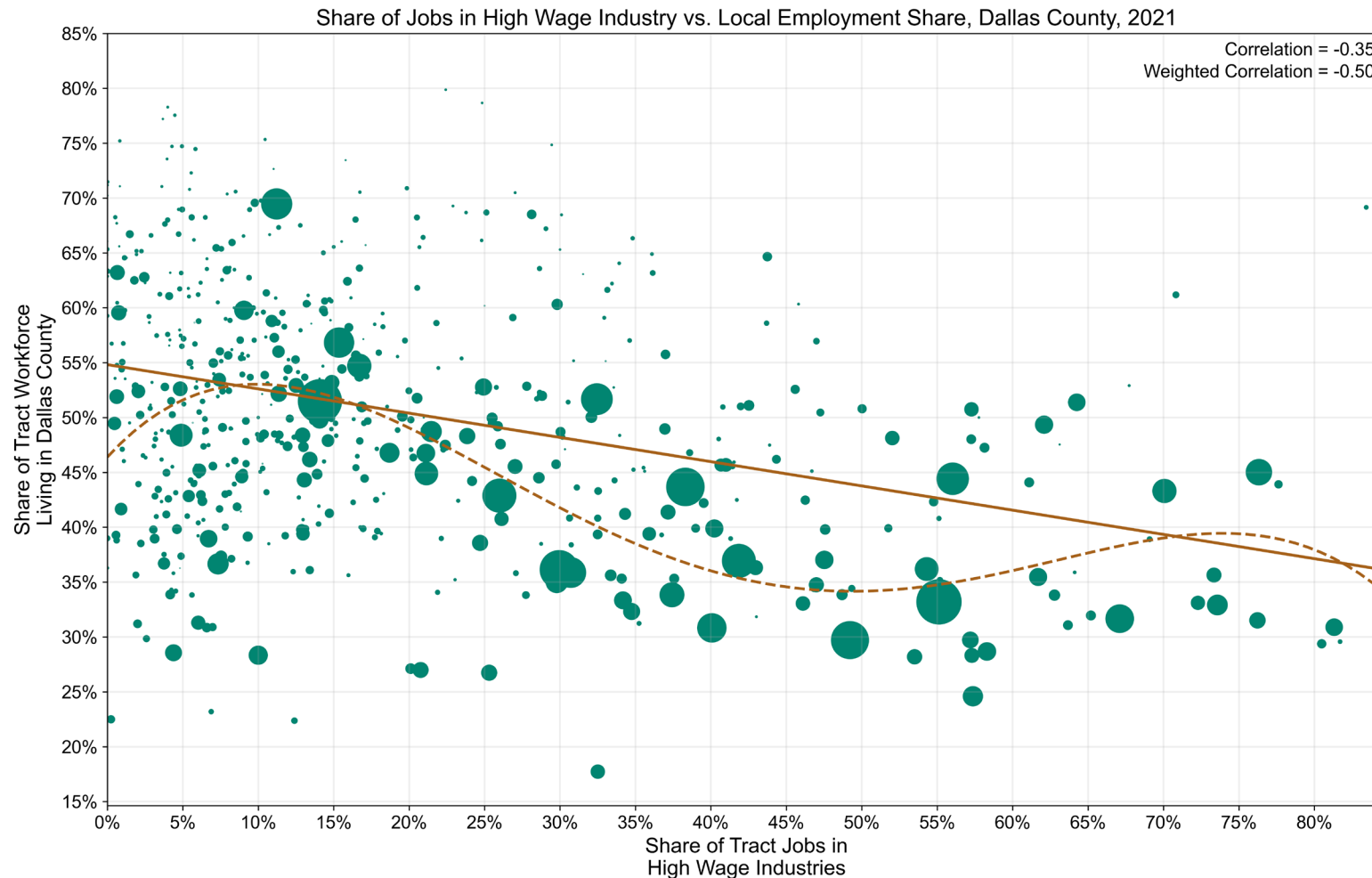| County	Percentage Point Change
Collin	3.1%
Dallas	-3.0%
Denton	1.2%
Tarrant	-1.3%

-98,000 high wage jobs in Dallas County

+81,000 high wage jobs in Collin County

49.5% of all jobs in the region are in Dallas County in 2021, down from a high of 57.6% in 2002.

Regional Competition for Declining Share of Jobs

Share of Jobs in High Wage Industry vs. Local Employment Share, Dallas County, 2021
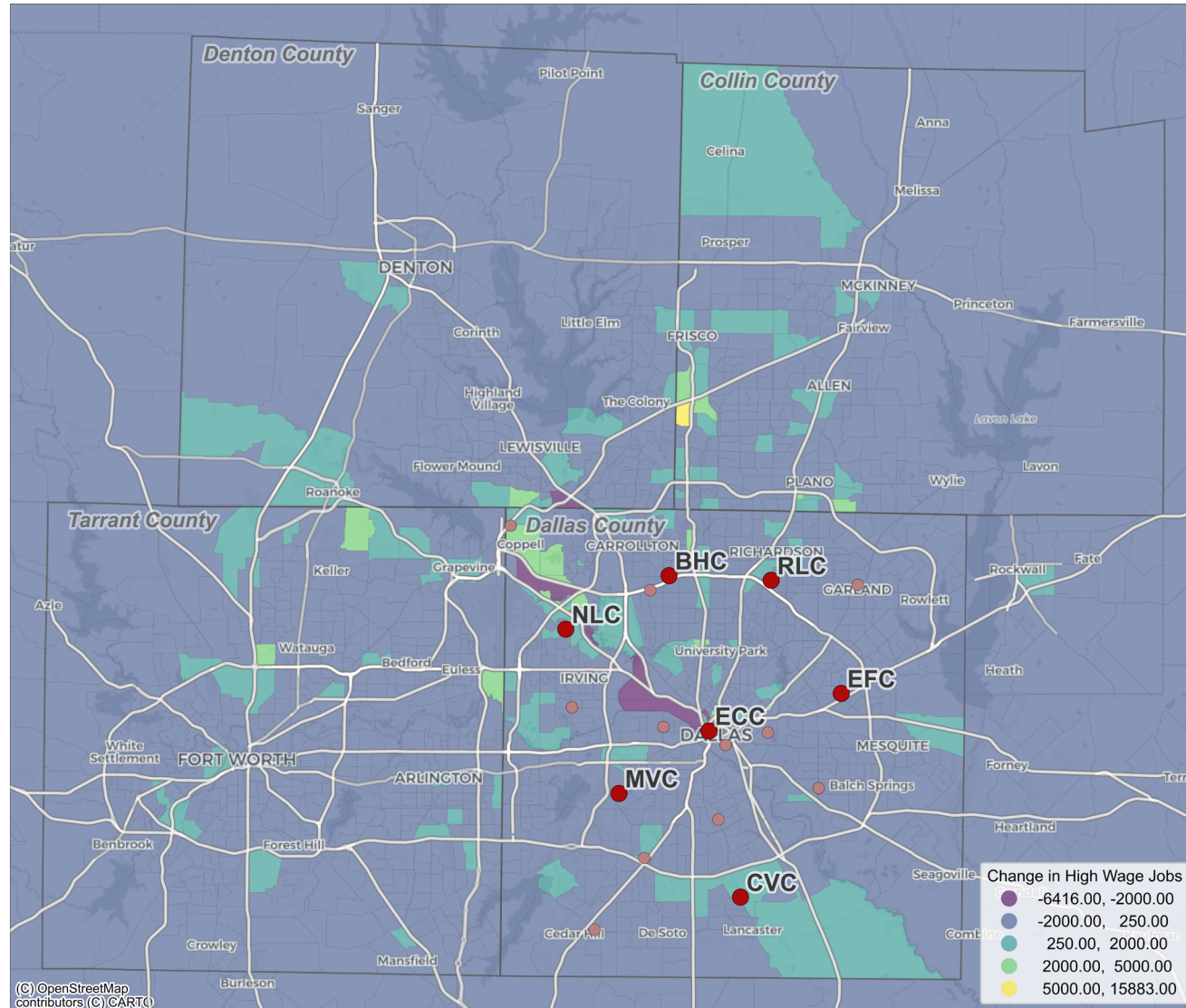
Correlation = -0.35
Weighted Correlation = -0.50

-12.7% Dallas County residents working in tracts with >70% of jobs in high-wage industries than expected

+6.3% stronger relationship between high-income jobs and non-local workforce since 2011

High Wage Job Growth, 2016 - 2021

Changes in Dallas College Enrollment Patterns

Headcount by Enrollment Type, Dallas College

Source: Dallas College LMIC

Headcount by Student Type, Dallas College

Source: Dallas College LMIC
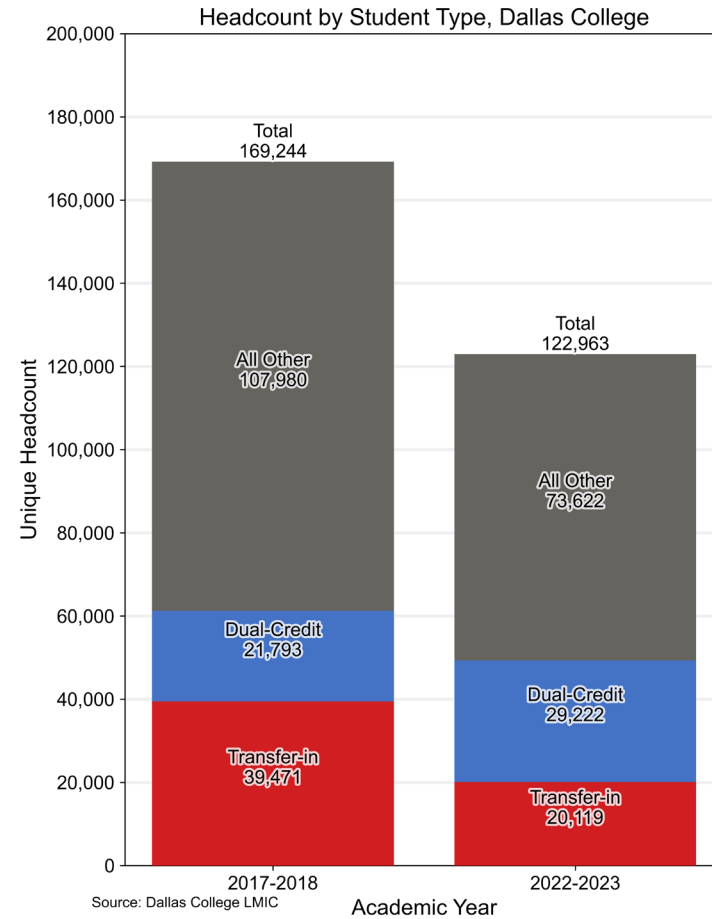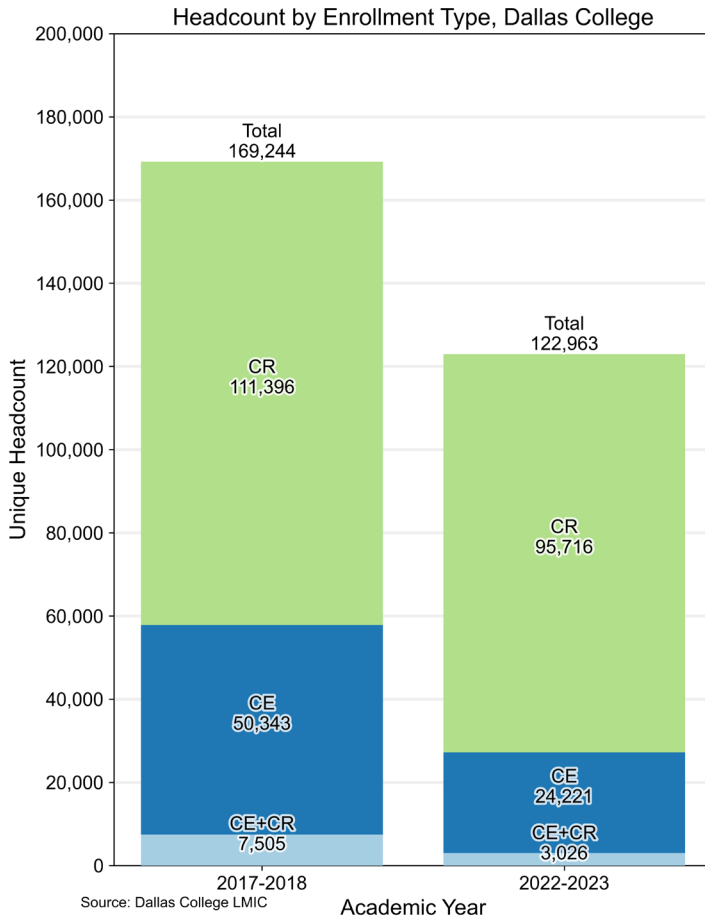
-15,000 credit (CR) headcount change from 2017-2018 to 2022-2023

-51% decline in transfer-in enrollments

-48% decline in continuing education (CE) enrollments

24% of enrollment from dual-credit high school age students, up from 13% in 2017-2018

Dual Credit Enrollment Growth, AY2018 – AY2023
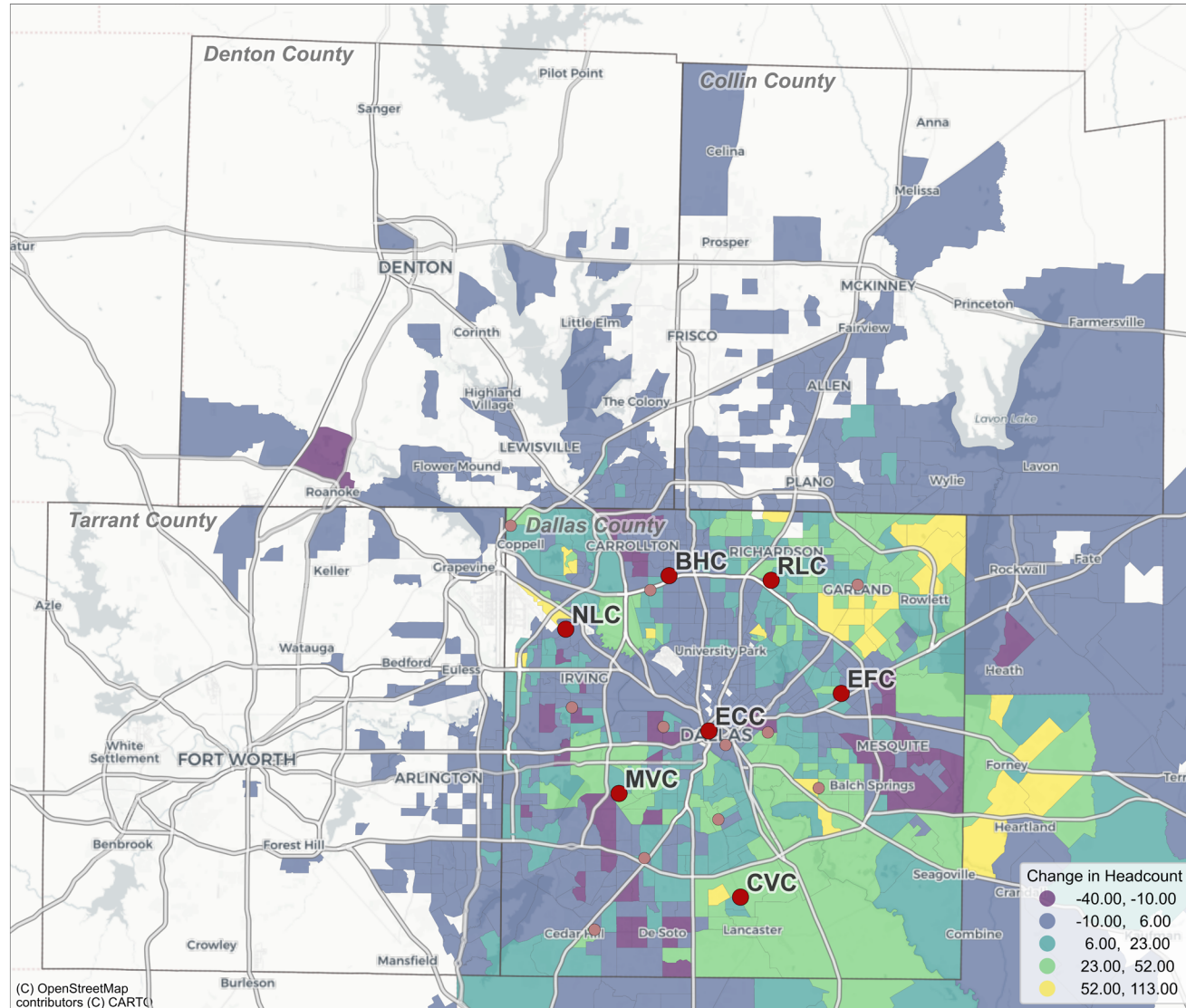
The Geographic Disconnect: Population and Jobs
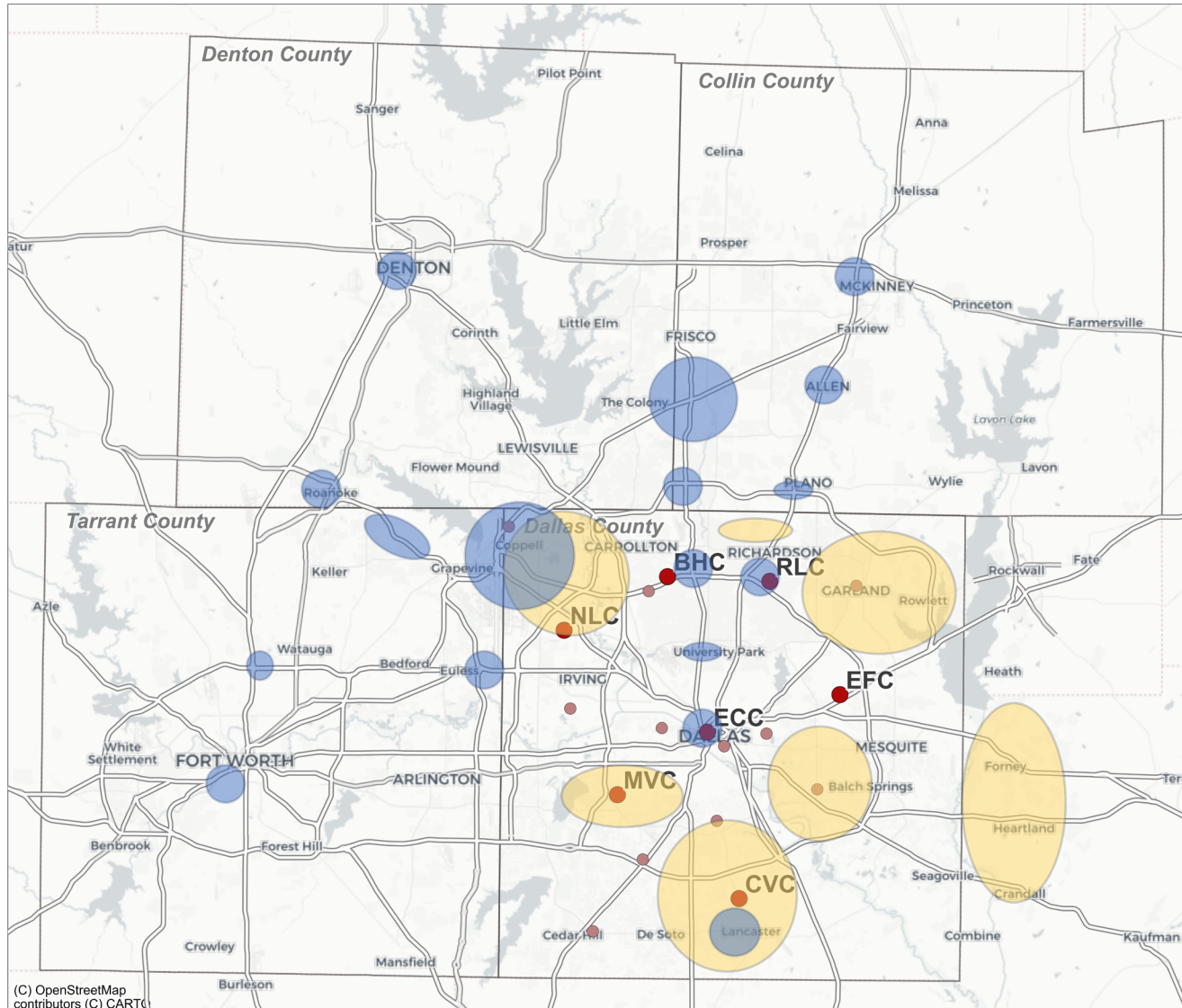
The areas contributing the most enrollment growth to Dallas College (**in yellow**) are geographically distinct from those areas adding the highest wage jobs (**in blue**)

HB8: New Funding Environment in Texas

- Reconfiguration of funding formulas for community colleges
- Away from enrollments, towards completions
- Incentives for graduates in particular programs linked to in-demand fields

How the Dallas College LMIC Responds

- Developing programming that is
  - Responsive to labor market
  - Serving students at a range of college levels
- Understanding our partners and campus areas
- Support for three areas using LODES Data
  - Campus planning
  - Economic development
  - Grant-led development

Enhancing Campus Planning Processes with RAC, WAC, and OD Data

Conflicting Priorities

- After COVID, Dallas College needs new plan for CE workforce centers

- Support employers vs. support residents, or can we do both at the same time?

- Will targeting outreach to the nearby labor force target the employment base for nearby employers?

Support Nearby Employers?

Support Local Students?
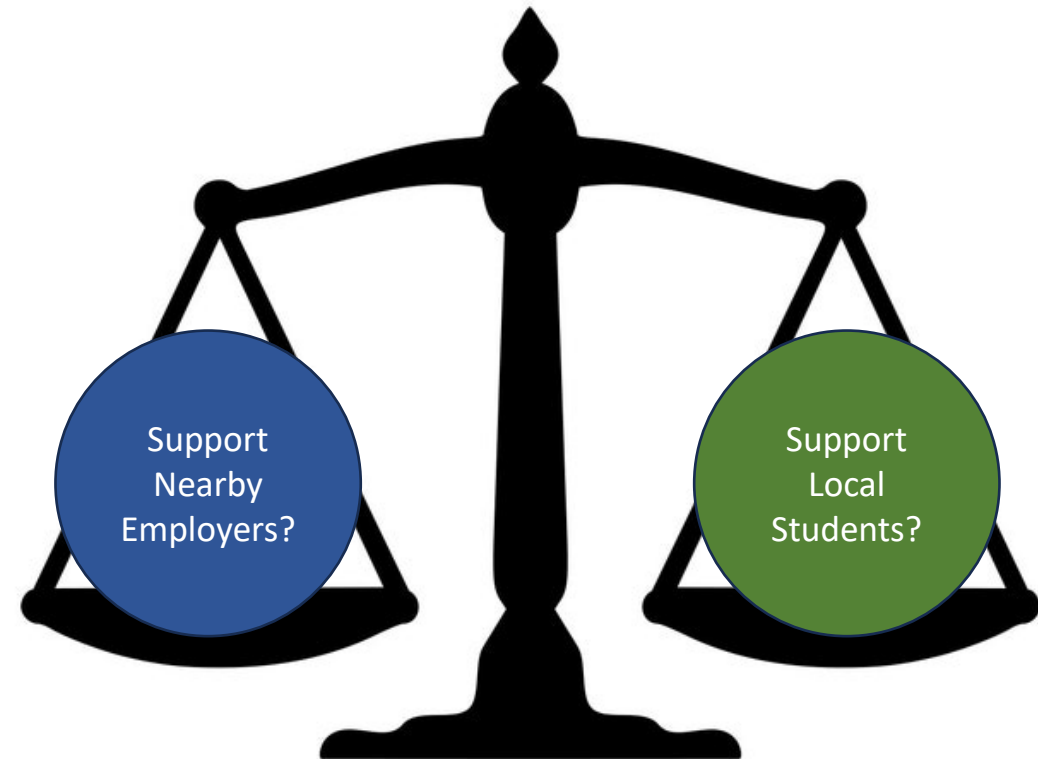
Where Are Students Coming From?
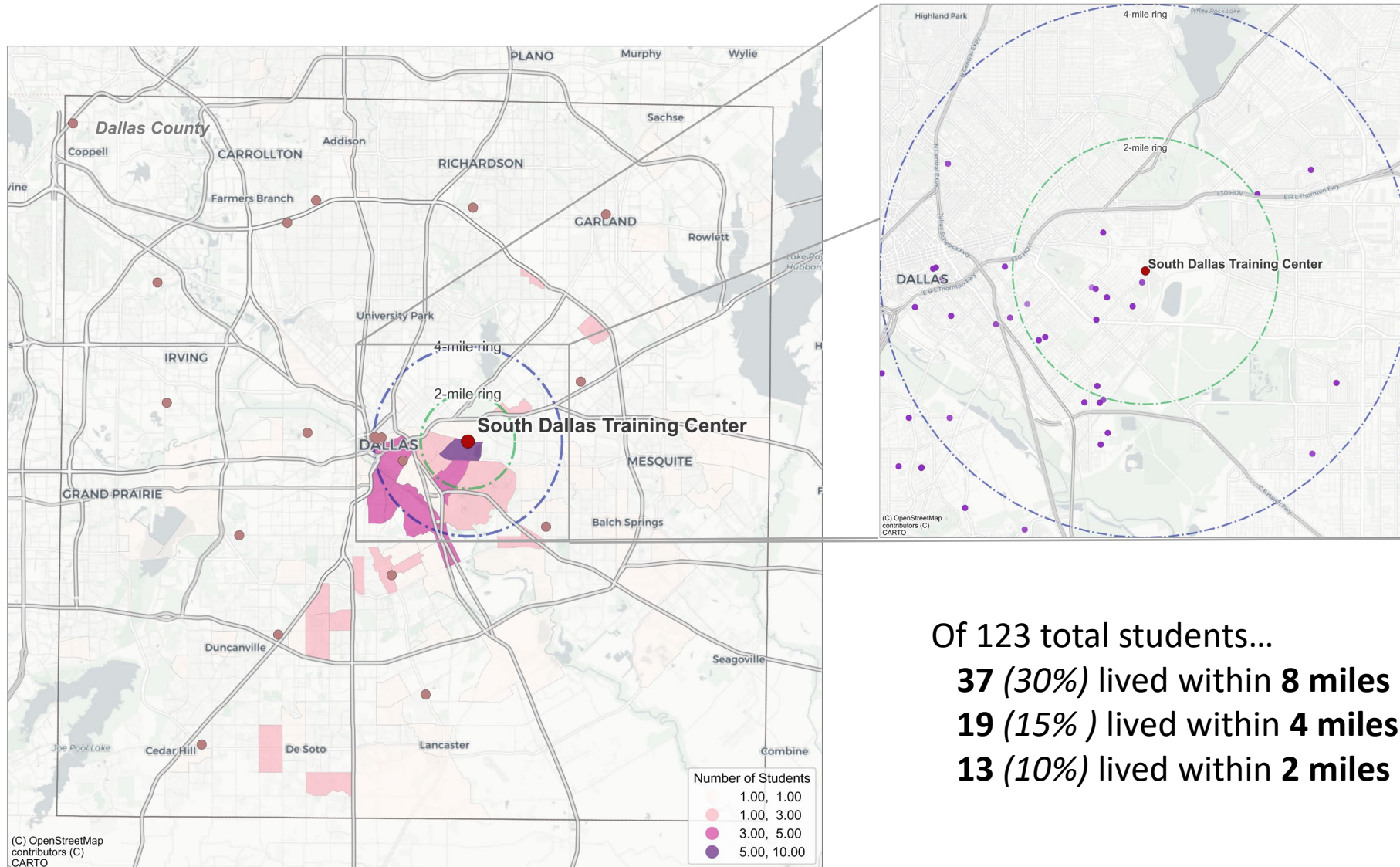
Of 123 total students...
37 *(30%)* lived within **8 miles**
19 *(15%)* lived within **4 miles**
13 *(10%)* lived within **2 miles**

Mapping Local Employment and Workforce

Resident Workers (RAC)

Nearby Employment (WAC)

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Balancing Competing Interests

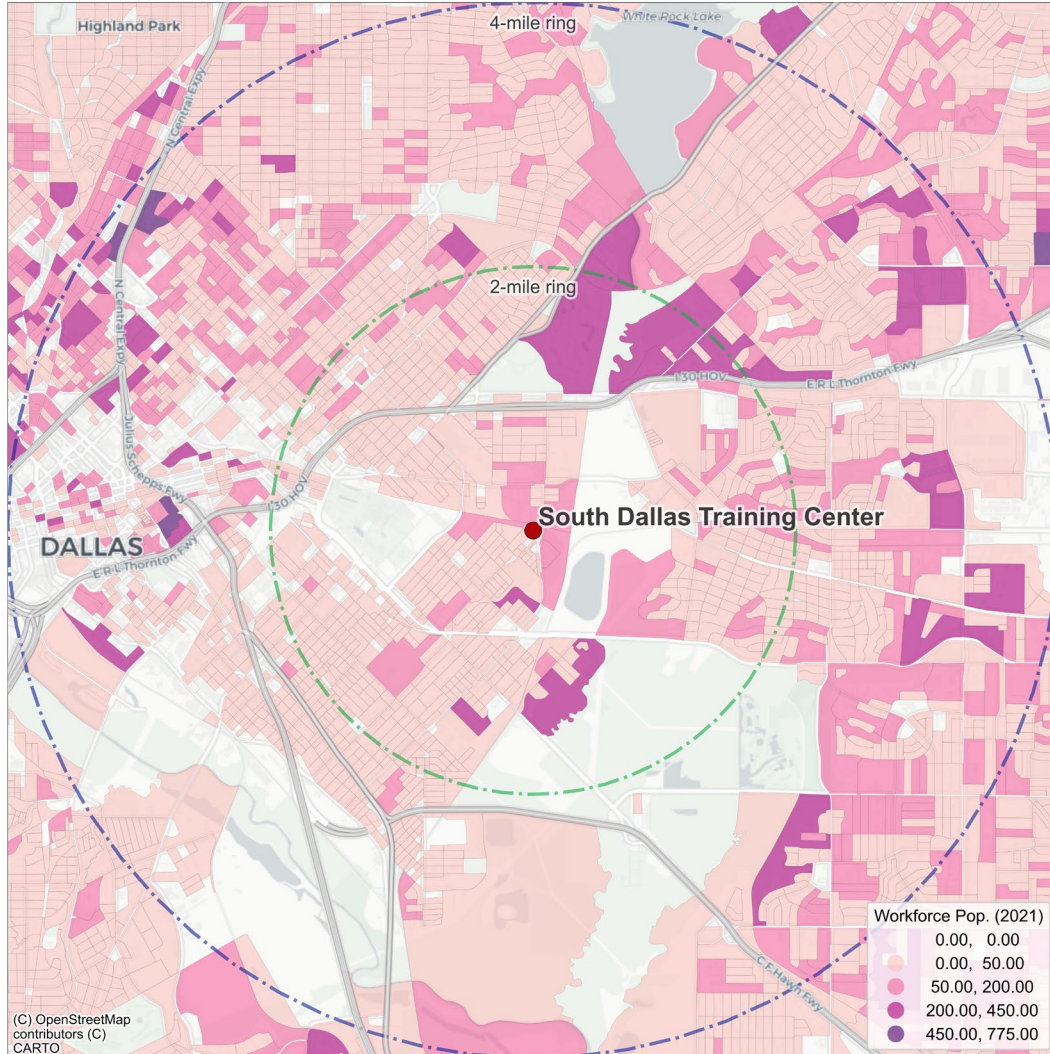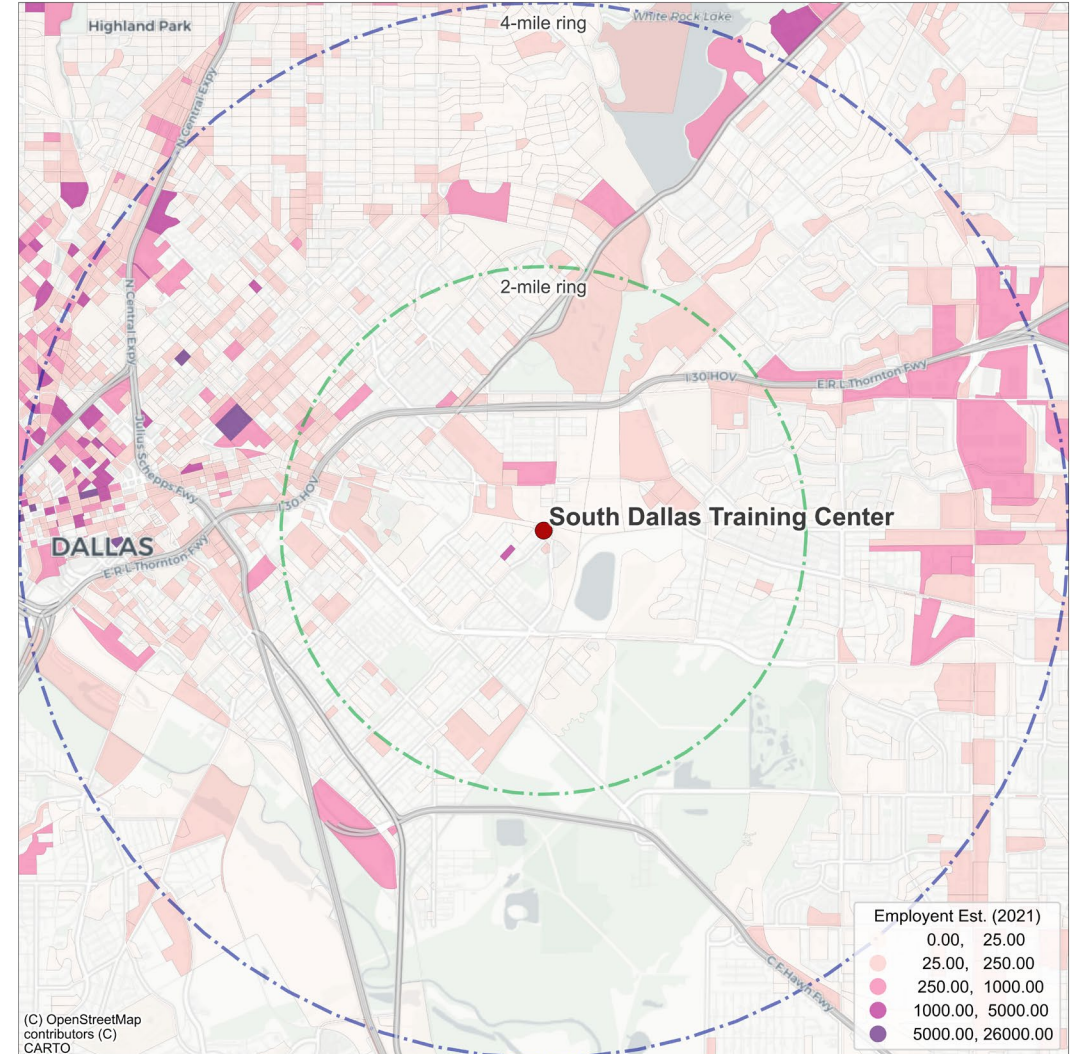| Resident Employment vs Employment Base: 2 Miles from South Dallas Training Center					
Industry	Resident Employment	Employment Base	Residents (% of Total)	Employment (% of Total)	Scale of Gap
Health Care and Social Assistance (62)	2,268	707	13.1%	7.6%	58%
Retail (44-45)	1,923	801	11.1%	8.6%	78%
Administrative and Support Services (56)	1,757	945	10.2%	10.2%	100%
Accomodation and Food Services (72)	1,510	616	8.7%	6.6%	76%
Educational Services (61)	1,308	414	7.6%	4.5%	59%
Professional, Scientific and Technical Services (54	1,265	645	7.3%	7.0%	95%
Construction (23)	1,138	777	6.6%	8.4%	127%
Transportation and Warehousing (48-49)	1,110	77	6.4%	0.8%	13%
Manufacturing (31-33)	1,107	413	6.4%	4.5%	69%
Finance and Insurance (52)	947	757	5.5%	8.2%	149%
Wholesale (42)	844	571	4.9%	6.2%	126%
Other Services (81)	454	412	2.6%	4.4%	169%
Real Estate(53)	392	251	2.3%	2.7%	119%
Public Administration (92)	353	1,277	2.0%	13.8%	673%
Information (51)	340	225	2.0%	2.4%	123%
Management of Companies (55)	213	170	1.2%	1.8%	149%
Arts, Entertainment, and Recreation (71)	206	204	1.2%	2.2%	184%
Utilities (22)	53	1	0.3%	0.0%	4%
Mining and Extraction (21)	50	6	0.3%	0.1%	22%
Agricultural (11)	21	2	0.1%	0.0%	18%
All Industries	17,259	9,271			

… a focus on **nearby residents** would emphasize pathways in Health Care, Transportation and Warehousing, and Educational Services

…. a focus on **nearby employers** would emphasize pathways in Public Administration, Arts and Entertainment, and Construction

Resident Destinations
1.00, 1.00
1.00, 5.00
5.00, 15.00
15.00, 50.00
50.00, 628.00

(C) OpenStreetMap contributors (C) CARTO

Comparing Commutes: Local Residents

There are **17,069** workers who live within 2 miles of the South Dallas Training Center

- **357** (2.1%) work within 2 miles
- **3,180** (18.6%) work within 4 miles
- **6,362** (37.3%) work within 8 miles
- **4,298** (48.5%) do not work in Dallas County!

Comparing Commutes: Worker Origins

Of the **9,445** workers employed within 2 miles of the South Dallas Training Center…

- **357** (3.8%) live within 2 miles of the Center,
- **959** (10.1%) live within 4 miles of the Center,
- **2,397** (25.4%) live within 8 miles of the Center
- **5,128** (54.3%) live outside Dallas County

Comparing Different Campuses

Local Employment Base - Workforce Origins (2 Mile Radius)			
Campus	**Total Employment within 2 Miles**	**Workforce Living within 2 Miles**	**Percent of Workforce**
Dental Hygiene Center	121,385	1,233	1.0%
Coppell Center (Construction Sciences Center)	39,386	516	1.3%
Brookhaven Campus	92,227	1,738	1.9%
West Dallas Center	35,894	716	2.0%
Bill J Priest Center	157,486	3,294	2.1%
North Lake Campus	101,601	2,734	2.7%
Culinary, Pastry and Hospitality Center	40,636	1,125	2.8%
Cedar Valley Campus	8,024	278	3.5%
Lancaster Workforce Development Center	9,486	336	3.5%
South Dallas Training Center	**10,604**	**400**	**3.8%**
El Centro Campus	234,245	8,938	3.8%
Downtown Design Center	236,514	9,040	3.8%
Downtown Health Sciences Center	238,293	9,291	3.9%
Redbird Center	22,010	921	4.2%
Mountain View Campus	13,191	585	4.4%
Richland Campus	58,660	2,611	4.5%
Eastfield Campus	21,631	1,127	5.2%
Cedar Hill Center	9,729	666	6.8%
Garland Center	18,528	1,514	8.2%
Irving Center	15,347	1,611	10.5%
Pleasant Grove Center	4,789	534	11.2%

Share of jobs near each campus held by local workforce varies from **1.0%** to **11.2%**

Farmer's Branch
119 workers

DFW Airport
81 workers

Garland Industrial District
142 workers

Medical District
205 workers

Design District
151 workers

Downtown
254 workers

Cedars
164 workers

Inset Map: Neighborhood Boundary

South Dallas Training Center

1.5 mile buffer
112 workers

Commuters from Neighborhood
— 100 - 225
— 36 - 100
— 16 - 35
— 6 - 15
— 1 - 5

Source: Dallas College LMIC, 2020 LODES Data

Analysis of LODES Data to Build Economic Development Partnerships

Providing LMI Analysis to Small Cities: Lancaster

- Smaller cities sometimes lack access to regional data or clout to marshal regional research focus

- High potential return for Dallas College partnership, because our impact can be huge

- Quick analyses using our pre-built infrastructure, we can support cities seeking to understand their own labor force
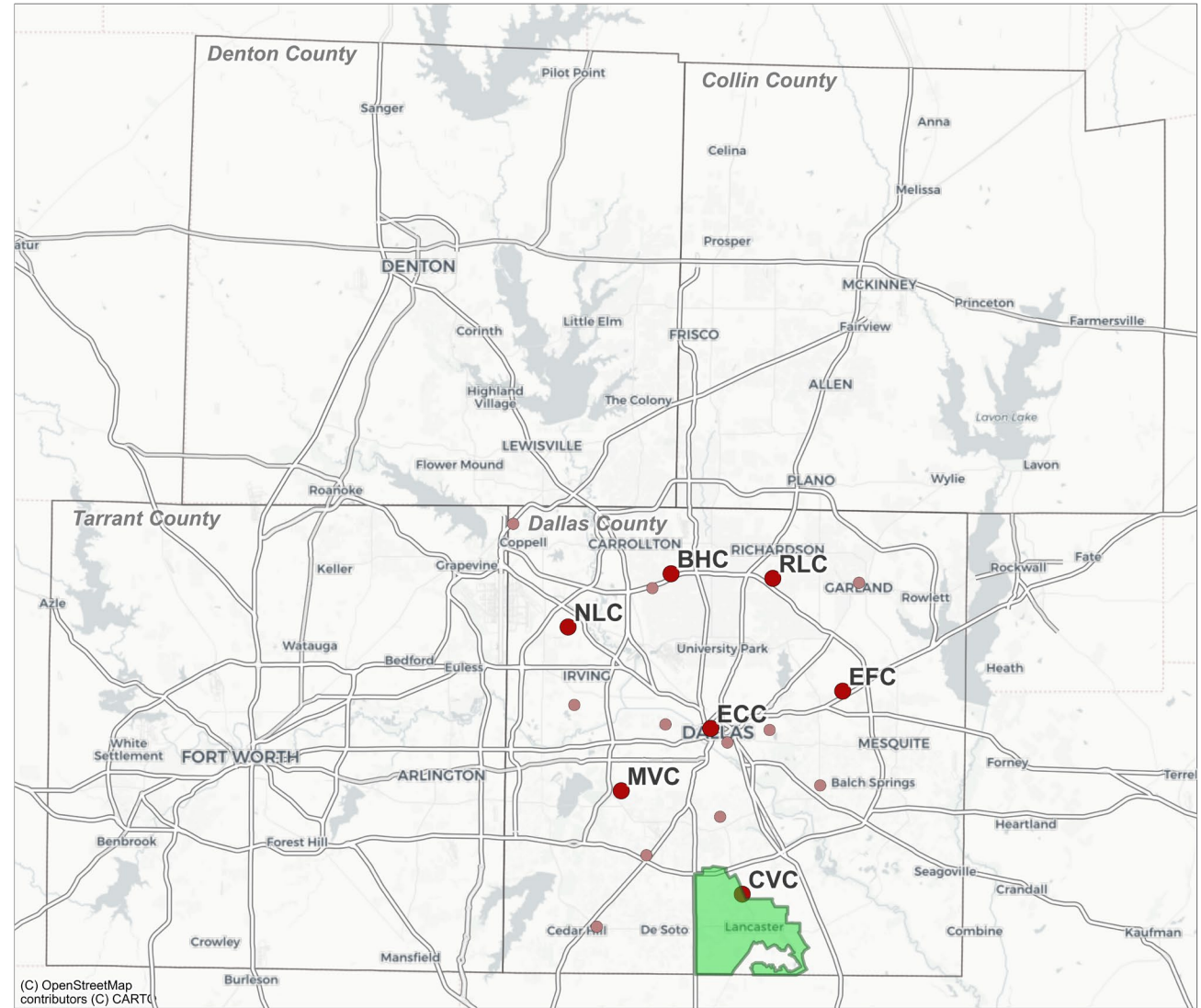
Growing Suburb on Dallas County's Edge
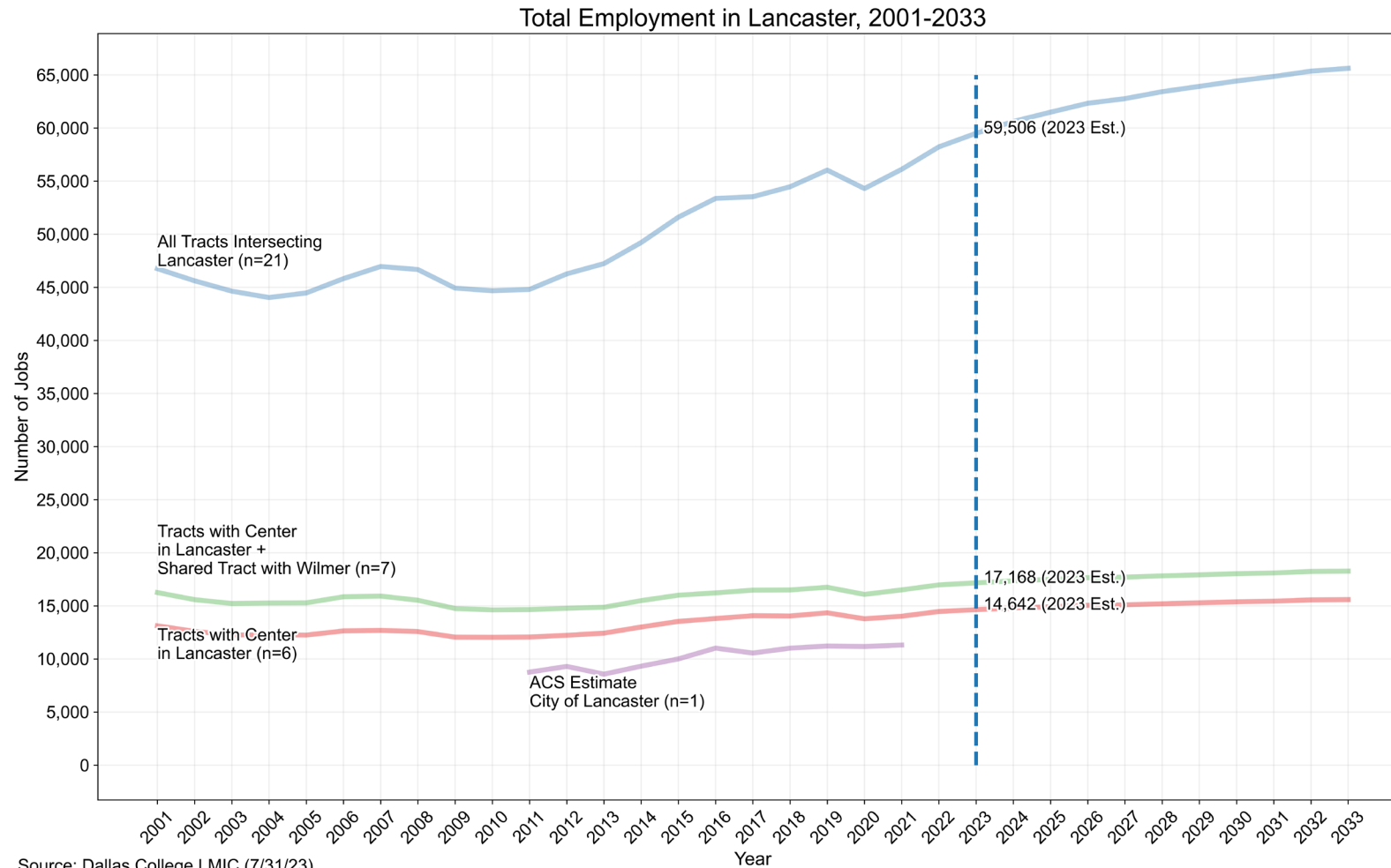
Total Employment in Lancaster, 2001-2033

- **Employment base of 15,000-20,000**

- **But who are those workers? Are they Lancaster residents?**

- **Have tax-abated industrial developments drawn local workers from Lancaster?**

Source: Dallas College LMIC (7/31/23)

Resident Workforce Destination: Rank Change Visualization

- Dallas has remained the top work location for Lancaster residents.

- Though Lancaster has captured an additional 200-300 local workers since a low in 2009, it pales in comparison to Dallas, which has employed 1,900 local workers

Where Residents of Lancaster Work, 2002-2021

Legend: Higher Rank YOY · No Change · Lower Rank YOY

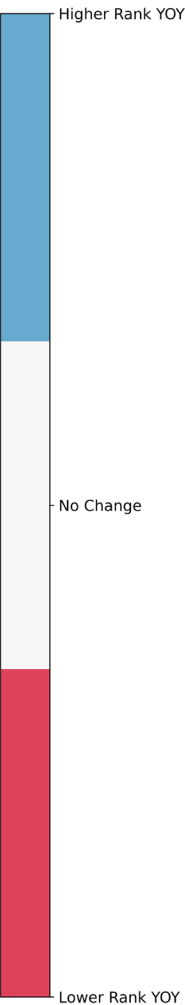|	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1st	Dallas (5,294)	Dallas (5,489)	Dallas (5,282)	Dallas (5,675)	Dallas (5,676)	Dallas (6,410)	Dallas (6,865)	Dallas (5,019)	Dallas (6,155)	Dallas (6,171)	Dallas (6,763)	Dallas (6,995)	Dallas (7,062)	Dallas (7,080)	Dallas (7,564)	Dallas (7,701)	Dallas (7,574)	Dallas (7,583)	Dallas (7,283)	Dallas (7,156)
2nd	Lancaster (818)	Lancaster (796)	Lancaster (689)	Irving (766)	Irving (753)	Irving (989)	Irving (1,146)	Irving (721)	Irving (1,034)	Irving (1,012)	Irving (923)	Lancaster (932)	Lancaster (1,000)	Irving (991)	Irving (1,091)	Irving (1,169)	Irving (1,110)	Irving (1,058)	Irving (1,011)	Irving (1,013)
3rd	Irving (727)	Irving (679)	Irving (667)	Lancaster (712)	Lancaster (657)	Lancaster (640)	Lancaster (637)	Lancaster (560)	Austin (565)	Austin (1,006)	Lancaster (839)	Irving (923)	Irving (949)	Lancaster (966)	Lancaster (952)	Lancaster (980)	Lancaster (1,024)	Lancaster (1,004)	Lancaster (992)	Lancaster (908)
4th	Arlington (374)	Arlington (383)	Arlington (392)	Arlington (433)	Fort Worth (461)	Arlington (501)	Arlington (537)	Fort Worth (520)	Fort Worth (558)	Lancaster (530)	Fort Worth (550)	Arlington (643)	Arlington (638)	Arlington (646)	Fort Worth (737)	Arlington (699)	Fort Worth (791)	Fort Worth (875)	Fort Worth (772)	Fort Worth (781)
5th	DeSoto (357)	Fort Worth (370)	Fort Worth (366)	Fort Worth (433)	Arlington (440)	Fort Worth (468)	Fort Worth (482)	Austin (471)	Lancaster (531)	Fort Worth (520)	Arlington (501)	Fort Worth (554)	Fort Worth (608)	Fort Worth (616)	Arlington (605)	Fort Worth (695)	Arlington (712)	Arlington (718)	Arlington (755)	Arlington (756)
6th	Plano (318)	Plano (343)	DeSoto (326)	Plano (354)	DeSoto (359)	Plano (403)	Plano (471)	Arlington (385)	Arlington (431)	Arlington (456)	DeSoto (487)	DeSoto (496)	DeSoto (556)	DeSoto (547)	DeSoto (506)	Plano (547)	Plano (519)	DeSoto (514)	Plano (552)	Plano (515)
7th	Austin (313)	DeSoto (336)	Austin (310)	DeSoto (336)	Plano (339)	Austin (382)	Grand Prairie (373)	Plano (374)	Plano (394)	Plano (421)	Plano (407)	Plano (428)	Plano (428)	Plano (537)	Plano (470)	Grand Prairie (460)	DeSoto (480)	Plano (513)	DeSoto (520)	DeSoto (458)
8th	Fort Worth (312)	Austin (323)	Plano (309)	Austin (293)	Austin (309)	Mesquite (348)	Austin (365)	DeSoto (291)	DeSoto (312)	Richardson (321)	Carrollton (300)	Carrollton (322)	Grand Prairie (346)	Richardson (370)	Grand Prairie (390)	DeSoto (459)	Grand Prairie (441)	Grand Prairie (440)	Richardson (470)	Grand Prairie (453)
9th	Farmers Branch (227)	Farmers Branch (237)	Garland (230)	Mesquite (246)	Farmers Branch (237)	DeSoto (336)	DeSoto (364)	Carrollton (227)	Mesquite (303)	DeSoto (315)	Mesquite (296)	Grand Prairie (302)	Richardson (343)	Grand Prairie (354)	Richardson (377)	Richardson (348)	Richardson (416)	Richardson (431)	Grand Prairie (401)	Richardson (445)
10th	Grand Prairie (199)	Richardson (229)	Mesquite (229)	Farmers Branch (221)	Grand Prairie (220)	Garland (313)	Garland (358)	Grand Prairie (227)	Richardson (295)	Mesquite (308)	Richardson (284)	Richardson (284)	Carrollton (287)	Carrollton (331)	Mesquite (350)	Carrollton (345)	Carrollton (400)	Carrollton (362)	Carrollton (354)	Carrollton (377)
11th	Garland (195)	Garland (205)	Grand Prairie (222)	Garland (212)	Mesquite (219)	Richardson (310)	Richardson (336)	Richardson (225)	Carrollton (286)	Carrollton (248)	Grand Prairie (278)	Mesquite (276)	Garland (284)	Mesquite (308)	Carrollton (335)	Mesquite (323)	Mesquite (359)	Garland (318)	Mesquite (338)	Garland (346)
12th	Carrollton (187)	Grand Prairie (205)	Farmers Branch (220)	Carrollton (203)	Richardson (208)	Carrollton (279)	Mesquite (329)	Houston (220)	Garland (262)	Grand Prairie (248)	Garland (255)	Houston (262)	Mesquite (279)	Garland (292)	Garland (331)	Garland (303)	Garland (302)	Mesquite (318)	Garland (308)	Farmers Branch (326)
13th	Mesquite (181)	Mesquite (204)	Carrollton (170)	Grand Prairie (202)	Carrollton (206)	Grand Prairie (259)	Carrollton (281)	Garland (218)	Farmers Branch (229)	Houston (245)	Farmers Branch (237)	Farmers Branch (233)	Farmers Branch (262)	Waxahachie (276)	Farmers Branch (313)	Farmers Branch (292)	Houston (291)	Farmers Branch (288)	Farmers Branch (263)	Mesquite (304)
14th	Richardson (170)	Carrollton (179)	Duncanville (164)	Richardson (197)	Garland (198)	Farmers Branch (226)	Farmers Branch (264)	Mesquite (205)	Grand Prairie (224)	Farmers Branch (238)	Houston (224)	Garland (230)	Houston (244)	Duncanville (259)	Duncanville (253)	Waxahachie (282)	Farmers Branch (278)	Houston (278)	Houston (240)	Houston (261)
15th	Duncanville (155)	Duncanville (169)	Richardson (158)	Duncanville (195)	Duncanville (186)	Addison (209)	Waxahachie (205)	Farmers Branch (195)	Houston (215)	Garland (237)	Duncanville (218)	Duncanville (204)	Addison (222)	Farmers Branch (228)	Houston (250)	Houston (262)	Waxahachie (268)	Addison (260)	Duncanville (239)	Addison (233)

Source: Dallas College Labor Market Intelligence Center

Local Employment Base Home: Heat Map

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1st	Dallas (1,664)	Dallas (1,483)	Dallas (1,567)	Dallas (1,439)	Dallas (1,541)	Dallas (1,594)	Dallas (1,619)	Dallas (1,394)	Dallas (1,403)	Dallas (1,468)	Dallas (1,791)	Dallas (1,845)	Dallas (1,868)	Dallas (2,078)	Dallas (2,099)	Dallas (2,192)	Dallas (2,228)	Dallas (2,279)	Dallas (2,877)	Dallas (3,319)
2nd	Lancaster (833)	Lancaster (804)	Lancaster (694)	Lancaster (732)	Lancaster (663)	Lancaster (646)	Lancaster (650)	Lancaster (563)	Lancaster (543)	Lancaster (546)	Lancaster (835)	Lancaster (927)	Lancaster (993)	Lancaster (958)	Lancaster (933)	Lancaster (969)	Lancaster (1,008)	Lancaster (980)	Lancaster (1,046)	Lancaster (980)
3rd	Fort Worth (278)	Arlington (223)	DeSoto (244)	DeSoto (353)	DeSoto (309)	DeSoto (320)	DeSoto (313)	DeSoto (281)	DeSoto (250)	DeSoto (280)	DeSoto (410)	DeSoto (388)	DeSoto (445)	DeSoto (444)	DeSoto (467)	DeSoto (464)	DeSoto (497)	DeSoto (501)	Fort Worth (613)	Fort Worth (741)
4th	Arlington (254)	DeSoto (219)	Arlington (220)	Arlington (191)	Arlington (262)	Grand Prairie (202)	Grand Prairie (247)	Arlington (260)	Arlington (239)	Arlington (265)	Arlington (268)	Arlington (262)	Mesquite (281)	Fort Worth (310)	Fort Worth (378)	Fort Worth (388)	Fort Worth (448)	Fort Worth (414)	DeSoto (583)	DeSoto (567)
5th	DeSoto (254)	Duncanville (198)	Fort Worth (189)	Cedar Hill (166)	Fort Worth (192)	Mesquite (187)	Arlington (235)	Mesquite (231)	Fort Worth (195)	Fort Worth (243)	Fort Worth (246)	Grand Prairie (241)	Arlington (280)	Arlington (286)	Arlington (357)	Arlington (317)	Arlington (345)	Arlington (386)	Grand Prairie (409)	Arlington (504)
6th	Grand Prairie (212)	Wilmer (170)	Wilmer (179)	Fort Worth (158)	Mesquite (181)	Arlington (178)	Mesquite (214)	Fort Worth (195)	Grand Prairie (182)	Grand Prairie (222)	Cedar Hill (235)	Fort Worth (240)	Fort Worth (266)	Grand Prairie (280)	Grand Prairie (296)	Grand Prairie (313)	Grand Prairie (323)	Grand Prairie (345)	Arlington (398)	Grand Prairie (466)
7th	Wilmer (205)	Mesquite (166)	Mesquite (162)	Mesquite (145)	Wilmer (157)	Fort Worth (163)	Garland (191)	Grand Prairie (193)	Mesquite (159)	Waxahachie (199)	Grand Prairie (231)	Mesquite (209)	Cedar Hill (260)	Mesquite (254)	Mesquite (238)	Mesquite (246)	Mesquite (293)	Mesquite (307)	Mesquite (379)	Mesquite (464)
8th	Mesquite (172)	Grand Prairie (151)	Cedar Hill (151)	Duncanville (142)	Duncanville (145)	Garland (135)	Fort Worth (180)	Garland (153)	Cedar Hill (140)	Mesquite (198)	Mesquite (223)	Cedar Hill (196)	Grand Prairie (244)	Cedar Hill (248)	Cedar Hill (233)	Cedar Hill (235)	Cedar Hill (245)	Cedar Hill (227)	Cedar Hill (283)	Irving (378)
9th	Duncanville (169)	Waxahachie (142)	Duncanville (144)	Red Oak (140)	Cedar Hill (141)	Waxahachie (132)	Cedar Hill (149)	Cedar Hill (138)	Waxahachie (140)	Cedar Hill (153)	Duncanville (188)	Duncanville (196)	Waxahachie (200)	Waxahachie (199)	Waxahachie (175)	Waxahachie (204)	Duncanville (167)	Duncanville (193)	Irving (278)	Cedar Hill (317)
10th	Waxahachie (136)	Cedar Hill (132)	Waxahachie (136)	Wilmer (138)	Waxahachie (136)	Cedar Hill (122)	Duncanville (147)	Waxahachie (130)	Garland (134)	Red Oak (149)	Waxahachie (166)	Waxahachie (183)	Red Oak (158)	Red Oak (183)	Duncanville (164)	Duncanville (202)	Waxahachie (164)	Red Oak (180)	Garland (228)	Duncanville (263)
11th	Garland (133)	Fort Worth (131)	Grand Prairie (127)	Grand Prairie (128)	Garland (132)	Duncanville (120)	Waxahachie (133)	Duncanville (122)	Duncanville (114)	Duncanville (138)	Red Oak (165)	Red Oak (157)	Duncanville (153)	Garland (176)	Irving (162)	Garland (171)	Red Oak (160)	Waxahachie (179)	Duncanville (217)	Garland (237)
12th	Cedar Hill (123)	Garland (112)	Plano (79)	Waxahachie (110)	Grand Prairie (127)	Wilmer (120)	Red Oak (109)	Irving (108)	Irving (103)	Garland (138)	Garland (137)	Garland (150)	Garland (136)	Duncanville (170)	Red Oak (162)	Red Oak (165)	Irving (157)	Garland (147)	Waxahachie (204)	Waxahachie (214)
13th	Ennis (111)	Glenn Heights (93)	Irving (77)	Garland (101)	Red Oak (127)	Red Oak (107)	Glenn Heights (96)	San Antonio (108)	Red Oak (102)	Irving (112)	Irving (132)	Irving (150)	Glenn Heights (126)	Irving (156)	Garland (138)	Irving (145)	Garland (141)	Glenn Heights (137)	Red Oak (162)	Glenn Heights (181)
14th	Glenn Heights (110)	Irving (92)	Garland (72)	Glenn Heights (80)	Irving (98)	Irving (102)	Irving (96)	Red Oak (97)	Plano (84)	Midlothian (104)	Glenn Heights (125)	Midlothian (144)	Midlothian (110)	Glenn Heights (138)	Glenn Heights (127)	Glenn Heights (124)	Midlothian (133)	Irving (133)	Glenn Heights (149)	Red Oak (175)
15th	Irving (99)	Ennis (78)	Glenn Heights (70)	Irving (73)	Ennis (78)	Plano (74)	San Antonio (81)	Midlothian (78)	Wilmer (80)	Glenn Heights (77)	Midlothian (119)	Glenn Heights (120)	Irving (101)	Midlothian (112)	Midlothian (109)	Midlothian (118)	Glenn Heights (131)	Midlothian (117)	Plano (123)	Houston (133)

Source: Dallas College Labor Market Intelligence Center

- Dallas sends approximately 3 workers for every 1 that Lancaster sends

- Sine 2011, more than 1,851 (+126%) Dallas residents took jobs in Lancaster, compared to only an additional 434 (+79%) for Lancaster residents

28

Commuting Patterns in Best Southwest
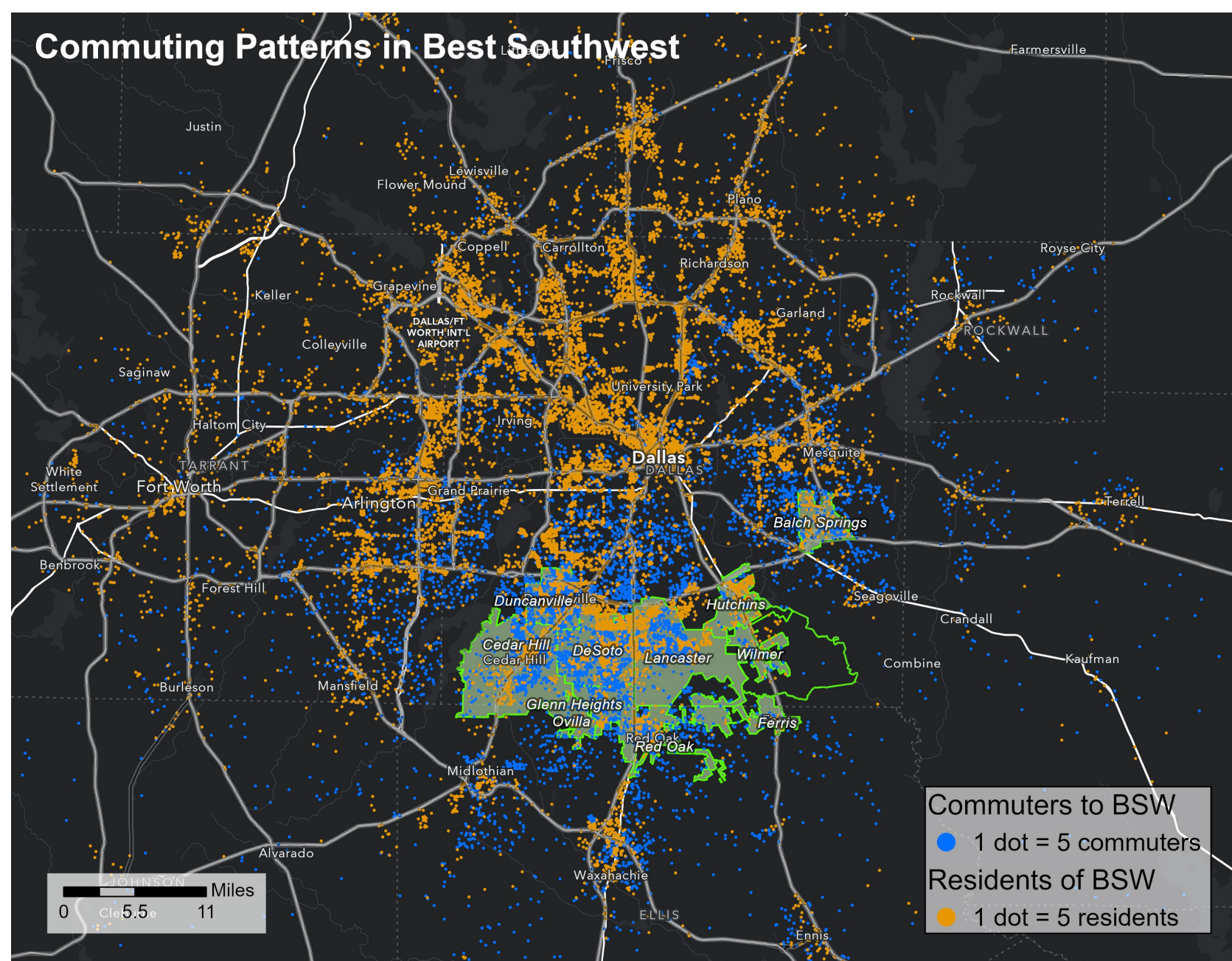
- **Building a narrative for economic development**
- **Lancaster serves as an employment base for City of Dallas, particularly in warehousing and industrial development**
- **At the same time, the resident base of Lancaster is employed in the City of Dallas and other suburbs,**
- **Local residents are not necessarily filling newly created jobs in Lancaster**
- **This could create conflict down the road for the region, but also opportunity for corporate recruitment**

Commuters to BSW
● 1 dot = 5 commuters
Residents of BSW
● 1 dot = 5 residents

Integrating LODES Data to Strengthen Grant Development

Grant Development: Attaining Regional Success

- Dallas College funded to lead a regional biotech workforce development model and take a regional role

- In this case, intra-regional competition emerging between cities for plant locations

- How can LMI data help grant implementation stakeholders find a path towards regional collaboration?

BUSINESS › TECHNOLOGY

Dallas College wins nearly $9 million to train North Texas' future biotech workers

Already, seven major health employers have agreed to create 1,100 combined entry-level positions that pay at least $15 an hour and include benefits.

"The [Economic Development Administration] was looking for something regional," Magill said. "They wanted to bring regions together. **People don't pay attention to city lines anymore and neither do companies.**"

Regional Commute Overlap - 30 Minute Drive

Commute Zones
- DeSoto Location
- EDS Plano
- Pegasus Park
- Major Roadway
- ★ DeSoto Biotech Site
- ▢ DeSoto
- ☆ Other Sites

Source: Dallas College Labor Market Intelligence Center
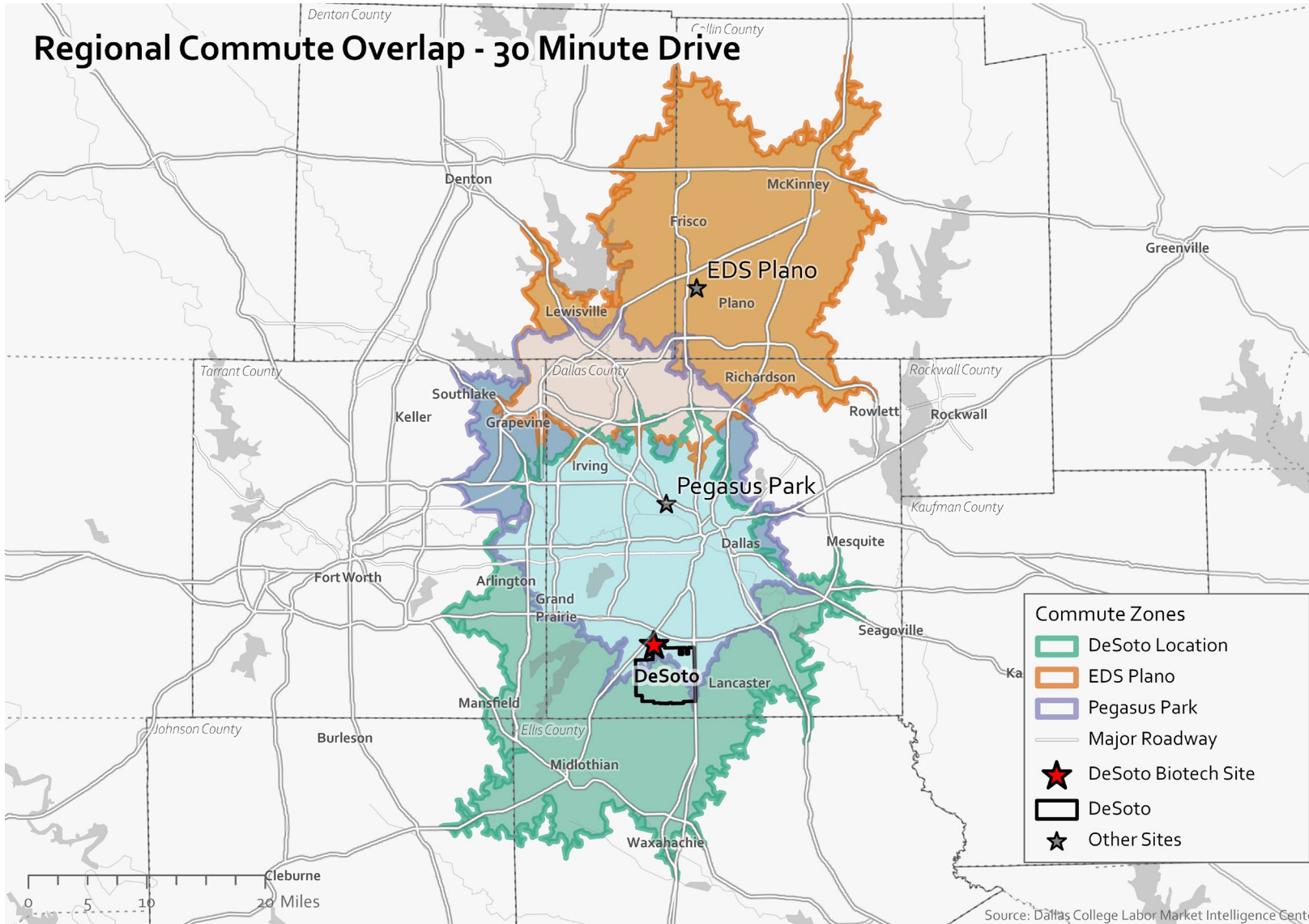
Understanding Intra-Regional Competition

- Corporate site selectors don't necessarily work as closely with us as they do with individual cities

- This has the potential to force competition to emerge between cities, undercutting aims of collaboration

- Dallas College is interested in helping cities articulate comparative advantage without undercutting regional approach

DeSoto Biotech Recruitment Efforts

- City of DeSoto seeks to diversify employment base by building on strengths in community retail and logistics

- Their case: existing regional manufacturing workforce is already proximate to DeSoto and as proximate as other regional locations

DeSoto Manufacturing Sector Worker Home Locations

Origin Commute Zone	Workers
Best Southwest/Far Southern Dallas	1703
Oak Cliff/Southern Dallas	1226
Waxahachie/Central Ellis County	637
Grand Prairie/Arlington	515
Grand Prairie/DFW South	499
South Dallas/Pleasant Grove	371
Midlothian	265
Mesquite/Eastern Dallas County	163
Seagoville/Southeastern Dallas County	159
Garland/Rowlett/NE Dallas County	153
Southern Ellis County	140
West Dallas/Hensley Field	140
Southern Fort Worth	137
Mansfield/Northeast Johnson County	135
Southeast Fort Worth	119
Far East Dallas	116
Irving/DFW North	113
Rural North Texas - Southeast/Corsicana	103

Percent of Manufacturing Workforce
- 0% - 1%
- 2% - 3%
- 4% - 10%
- 11% - 25%
- Major Roadway
- ★ DeSoto Biotech Site
- ☆ Other Sites
- ▭ Drivetime - 30 Minutes

Source: Dallas College Labor Market Intelligence Center

Overlapping Access to Manufacturing Employment Base

- Design District/Medical District already draws a significant portion of its manufacturing workforce from the DeSoto commute shed

- An employer in DeSoto could compete for manufacturing workers who Dallas College would upskill into biologics manufacturing positions

Design District Manufacturing Sector Worker Home Locations

Origin Commute Zone	Workers
Grand Prairie/DFW South	1475
Oak Cliff/Southern Dallas	1013
South Dallas/Pleasant Grove	709
Best Southwest/Far Southern Dallas	669
Grand Prairie/Arlington	545
Garland/Rowlett/NE Dallas County	544
Lewisville/Southeast Denton County	502
Irving/DFW North	396
Far East Dallas	370
Addison/Midtown Dallas	352
Mesquite/Eastern Dallas County	344
West Dallas/Hensley Field	311
Keller/North Tarrant County	308
Frisco/Little Elm	278
Preston Center/North Dallas/Park Cities	269
Richland Hills/East Fort Worth	267
Waxahachie/Central Ellis County	250
North Dallas 75 Corridor	227
Denton	225
West Plano	225
Southeast Fort Worth	202

Percent of Manufacturing Workforce
- 0% - 1%
- 2% - 3%
- 4% - 10%
- 11% - 25%
- Major Roadway
- ★ DeSoto Biotech Site
- ☆ Other Sites

Source: Dallas College Labor Market Intelligence Center

Technical Overview

Custom Python functions

- Facilitates blending data from different sources

- Developed a library of standard requests, which feed into custom visual templates

- Simplify while allowing flexibility for geometry, year, data specifications, etc.

```
## Task: Get totals by home blocks for a polygon representing downtown Houston

#Point to the database
spath = r"C:/User/TexasData.db"

#Convert GeoDataFrame geometry to a Well-Known Text object
#We'll pretend we already defined the GeoDataFrame htown in another line
wkts = transform_to_wkt(gdf=htown)

#Get the blocks that intersect with your geometry as a list
isect_blocks = id_intersections(
                wkt=wkts.iloc[0],
                spath=spath)['geocode'].tolist()

#Generate a query to pass to your database
sql_query = generate_query(
                data_type='od',
                perspective='work',
                job_type='primary',
                year='2021',
                geocodes = isect_blocks)

#Query your database
out_df = pull_data(
                query = sql_query,
                spath=spath,
                rename=True)
```

Data Workflow

0. Dataset Construction

1. Dataset Identification

2. Analysis/Visualization

3. Final Analysis

LODES data pathway

Context data pathway

LODES Dataset Construction

Python-based workflow to build a state-level database containing OD, RAC, and WAC files.

Other Dataset Construction

Existing institutional data processes.

LODES (Spatialite)

Spatial-enabled database for querying LODES data.

Internal student data (SQL Server)

ACS data (API)

Appraisal district data (postgis)

Other LMI data (API)

LODES Analysis (Python)

Workflow to quickly analyze LODES SQLite data

Visualization (Python)

Other Analysis (Python)

Complete Analysis

Charts, tables, etc.

Build On or Copy It via Github

0. Dataset Construction	1. Dataset Identification	2. Analysis/Visualization	3. Final Analysis

LODES data pathway

LODES Dataset Construction

Python-based workflow to build a state-level database containing OD, RAC, and WAC files.

LODES
(Spatialite)

Spatial-enabled database for querying LODES data.

LODES Analysis
(Python)

Workflow to quickly analyze LODES SQLite data

https://github.com/Dallas-College-LMIC/lodes-dataset-construction

Analysis

Context data pathway

Other Dataset Construction

Existing institutional data processes.

Internal student data
(SQL Server)

ACS data
(API)

Appraisal district data
(postgis)

Other LMI data
(API)

Visualization
(Python)

Other Analysis
(Python)

Contact and Questions

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https://www.dallascollege.edu/business-industry/lmic/

Thanks to:
Dr. Tana Hicks, Senior Director
and Ammar Nanjiani, Assistant Director

GitHub Repo QR Code