Carrie Makarewicz, PhD
Assoc. Professor & Department Chair

With Graduate Research Assistants:

Brenn Anderson-Gregson
Dani Slabaugh, PhD ‘25
Ethan Greene
Francesca Rossi
Rey Hernandez Sosa
Laura Santos Granja
Ebru Altintas
Wes Wright
April Getz
Maya Diaz
Mykayla Marek
Marck Schenberger
Jack Suva-Urwin
Christina Noto
Gregory Roy
Laia Mitchell
Melanie Sloan
Deb Bristol
…and more

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A 12-year study of Denver Metro’s Continued Housing, Jobs and Transportation Spatial Mismatch

2014 - Spring 2026

A brief recent history

Denver Metro's Desire to be a "world class" city, brought world class city problems, including an affordable housing crisis

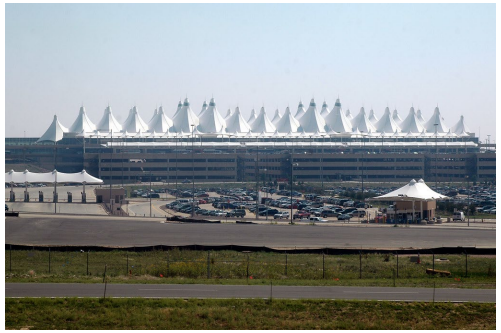
Major investments: 1994 to 2001

Population: 31% Growth	
1990	2000
1,667,181	2,179,337

- **1994**-2016: 10 transit lines (4 commuter, 6 LRT), 84 stations, 115 track miles, 2,345 sq.mi. service area (last constructed in 2016)
- **1995**: Coors Field opens (CO Rockies baseball)
- **1995**: Denver International Airport opens
- **1999:** Ball Arena opens (Denver Nuggets, Avalanche)
- **2001:** Empower Field at Mile High (Denver Broncos)









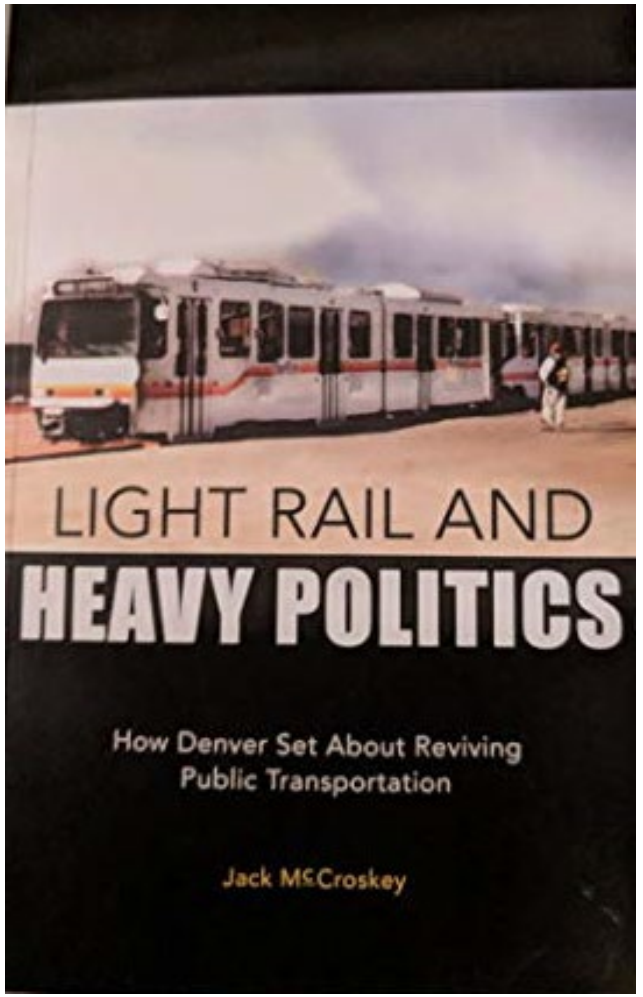




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Denver Metro Households housing cost burdened, “pre-crisis”, yet LRT was designed for middle-class suburbs

% Households Housing Cost Burdened >30% income on housing		
1990	2000	2020
37.0%	38.1%	49.2%



Phase I: Sustainable Communities Initiative

Funded by DRCOG via U.S. HUD, DOT, EPA SCI Grant

2014-2015

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CU Denver Phase I: Approach & Data (2014-2015)

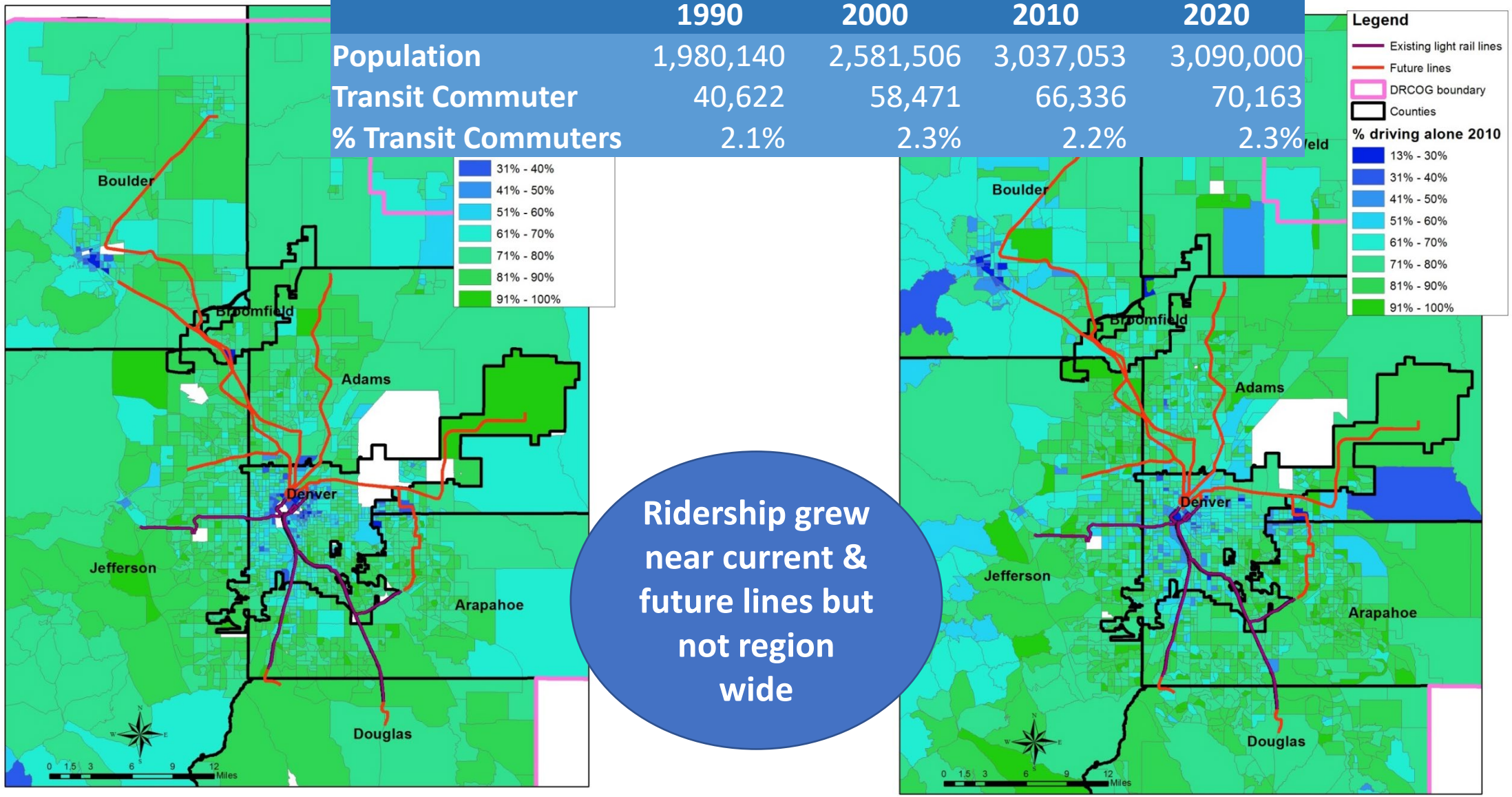
- **45 Station Area Evaluations**
  - **Data:** Primary and secondary
  - **Compare/contrast 3 sources:** interviews, data, observation
- **64 Interviews**
  - **Expertise:** developers, planners, financiers, workforce, public works, organizers, economic development, elected officials
  - **Geography:** 5 Corridors, Denver, Region wide
  - **Sector:** Public, private, non-profit
- **3 Case Studies**
  - Dallas | Portland | San Diego

Workers commuting by transit 1990-2010

1990 % Driving Alone

2010 % Driving Alone

	1990	2000	2010	2020
Population	1,980,140	2,581,506	3,037,053	3,090,000
Transit Commuter	40,622	58,471	66,336	70,163
% Transit Commuters	2.1%	2.3%	2.2%	2.3%

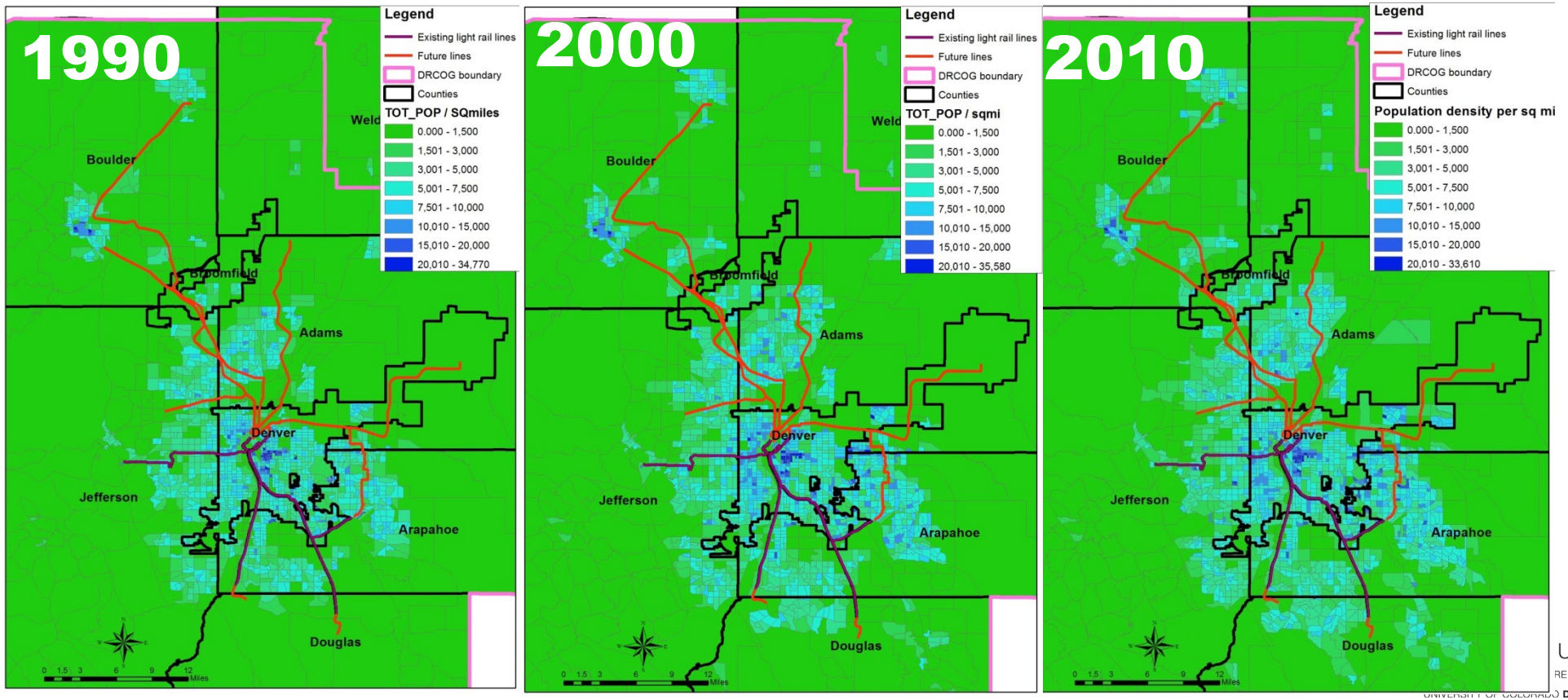


Ridership grew near current & future lines but not region wide

Was population growing near transit?

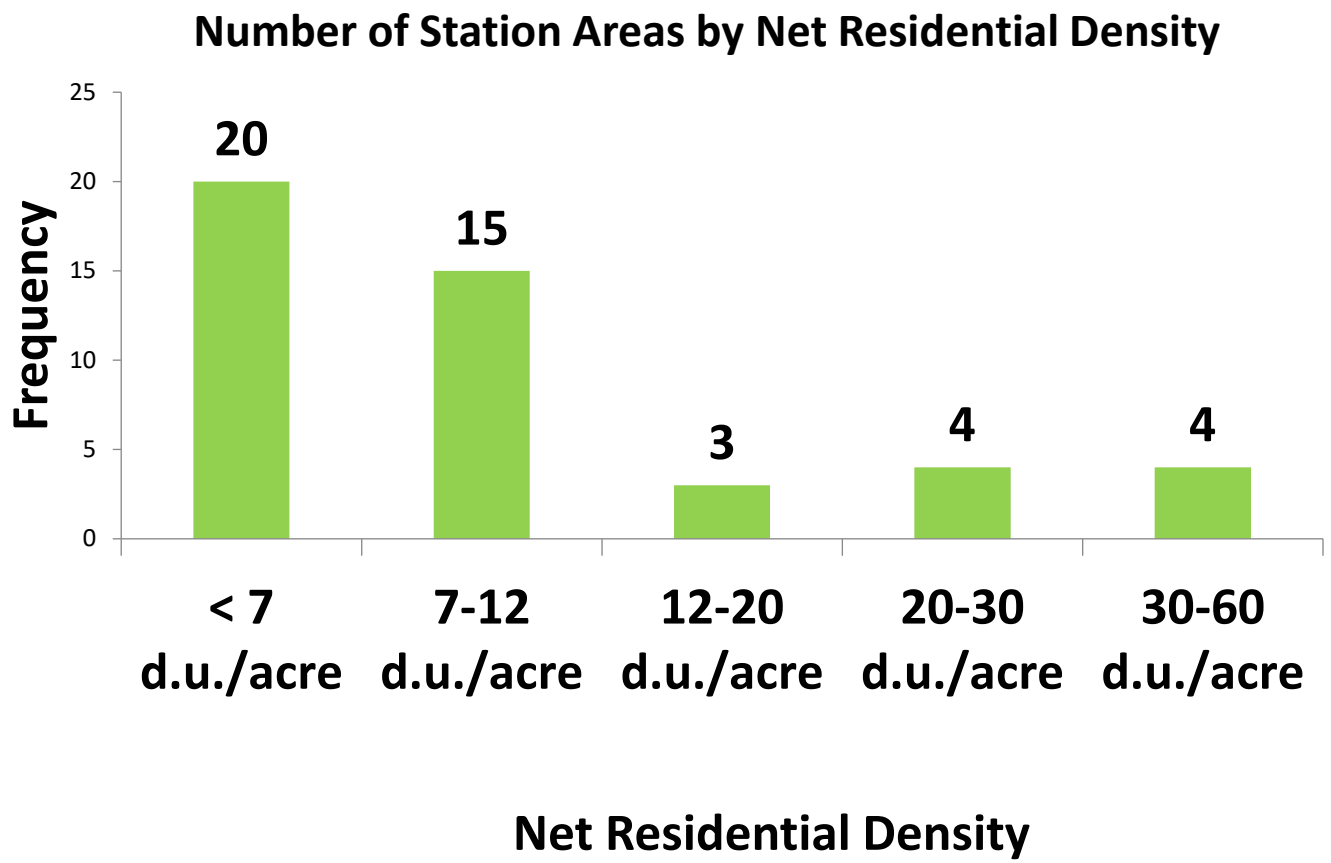
	Pop. Urbanized Area	Pop. Station Areas
1990	1,980,140	N/A
2000	2,581,506	162,648 (6%)
2010	3,037,053	187,216 (6%)

95% of population growth 2000-2010 outside of station areas



Room for Growth in Station Areas

Net residential density is <7 d.u./acre in 43% of station areas



Station Area Analysis Criteria

STATION AREA ANALYSIS

Station Area *(immediately adjacent to rail station)*

- Wayfinding
- Connectivity & Barriers
- Disability Accessible
- Parking
- Station Design
- Safety

Half-Mile Zone *(average walking distance to station)*

- Safety
- Ridership
- Quality of Walk
- Plans
- Buses
- Infrastructure
- Jobs: type & #
- Vibrancy
- Amenities
- Destinations
- Density
- Affordability





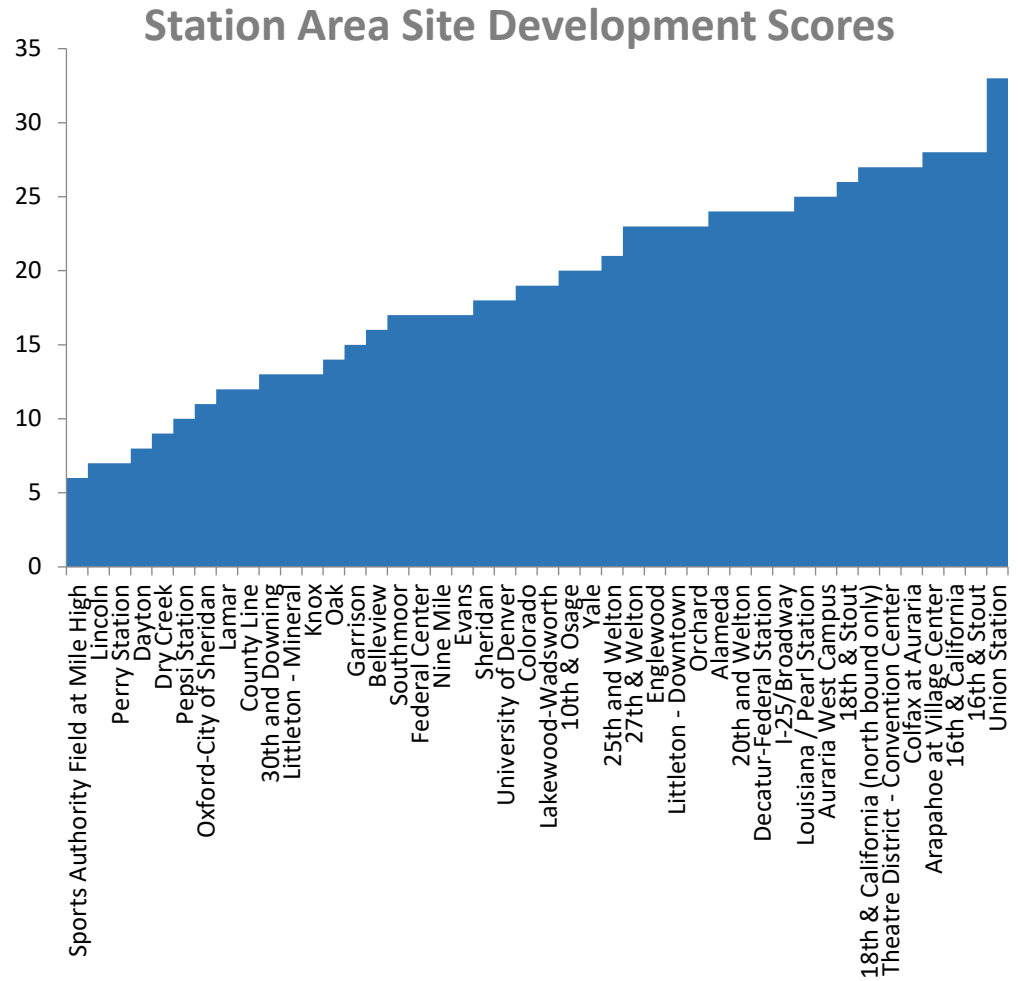


Placing housing near transit was limited due to site development, amenities, infrastructure and funding

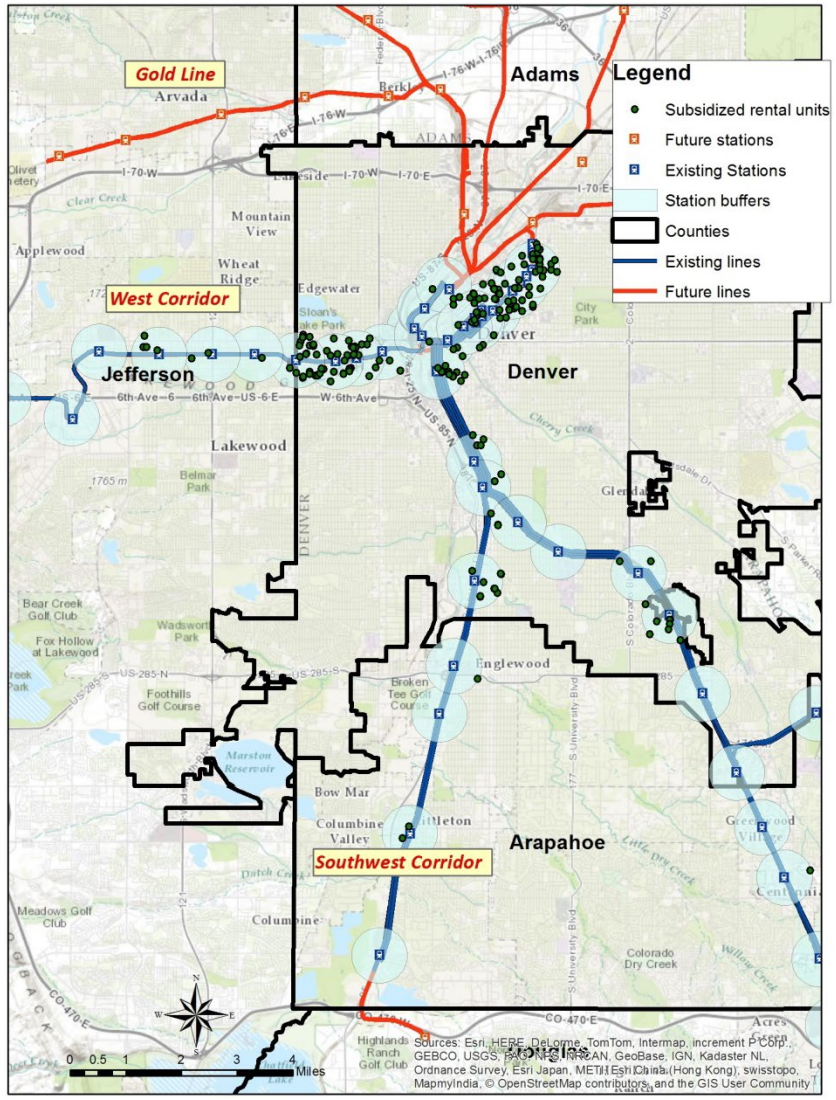
In 2014, most stations met less than 50% of criteria

Site Development Criteria

- Station design
- Major Destinations/attractions
- Mix/Segregation of uses
- Housing density
- Public amenities
- Zoning
- Vibrancy and utilization
- Sub-area or station plans with goals (10 do not have plans)



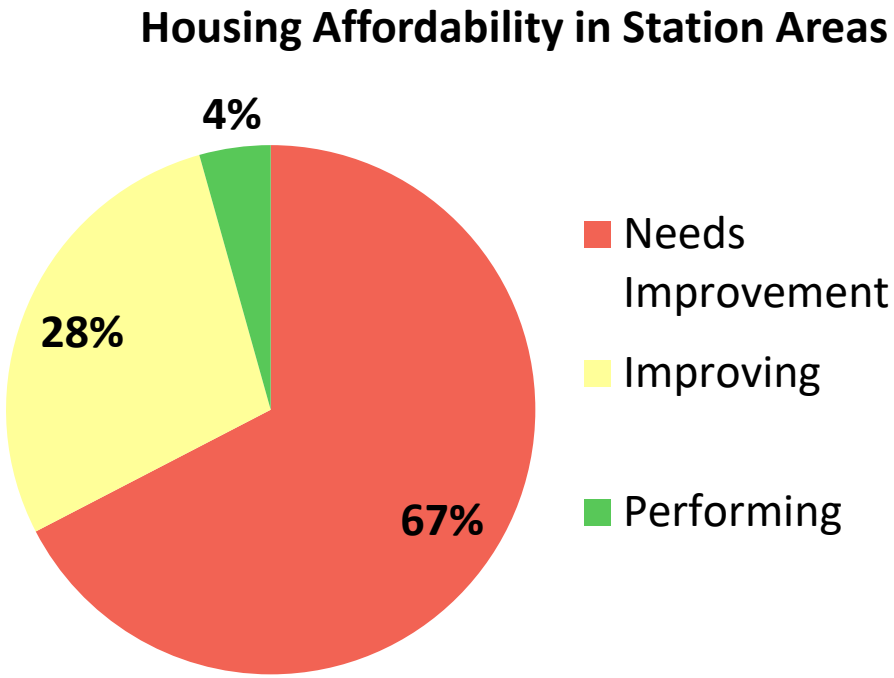
It was especially hard to put *affordable* housing near transit



Housing Affordability Criteria

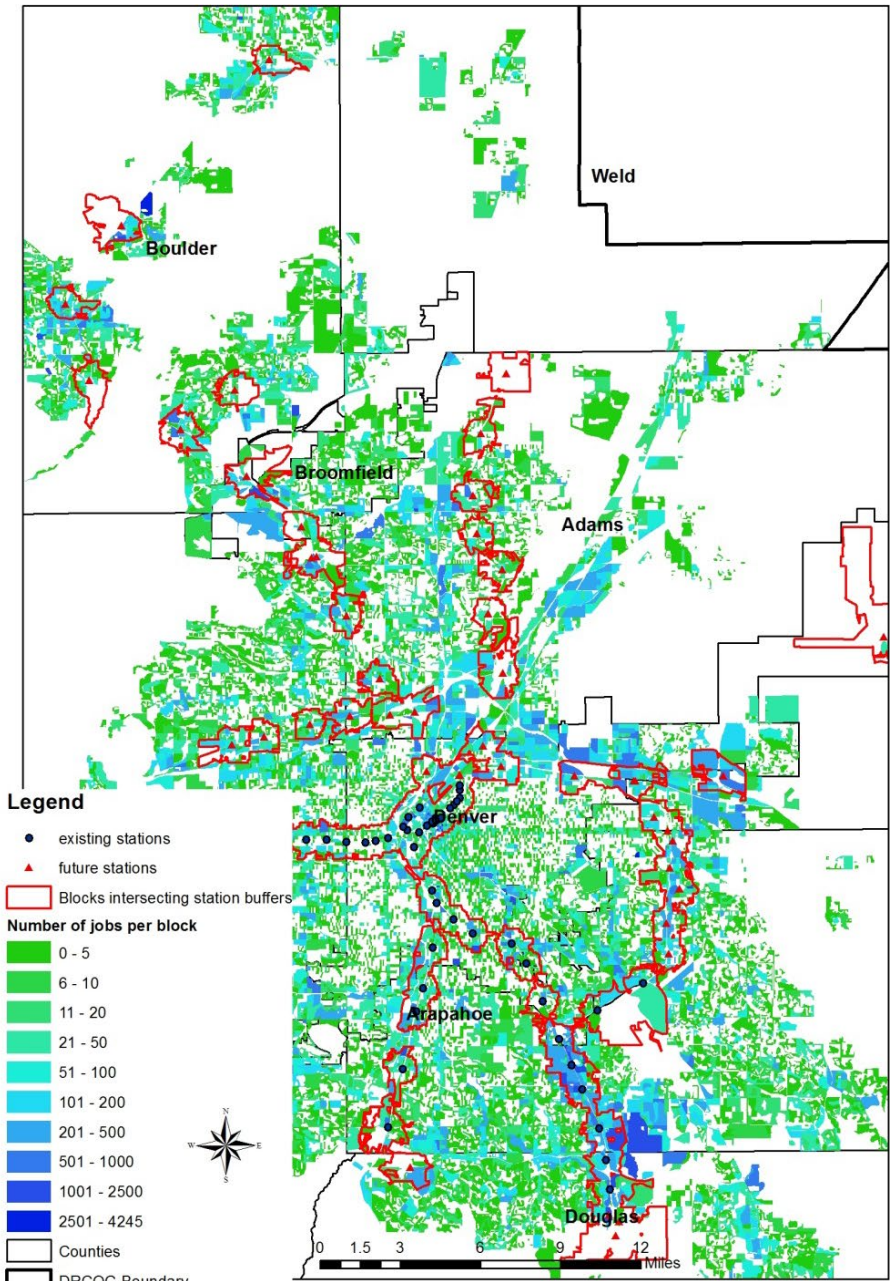
- Mix of incomes
- Share of cost-burdened households
- Share of rental units
- Number of subsidized units
- Net Residential Density

In 2014, only 4% of station areas had conditions for affordable housing

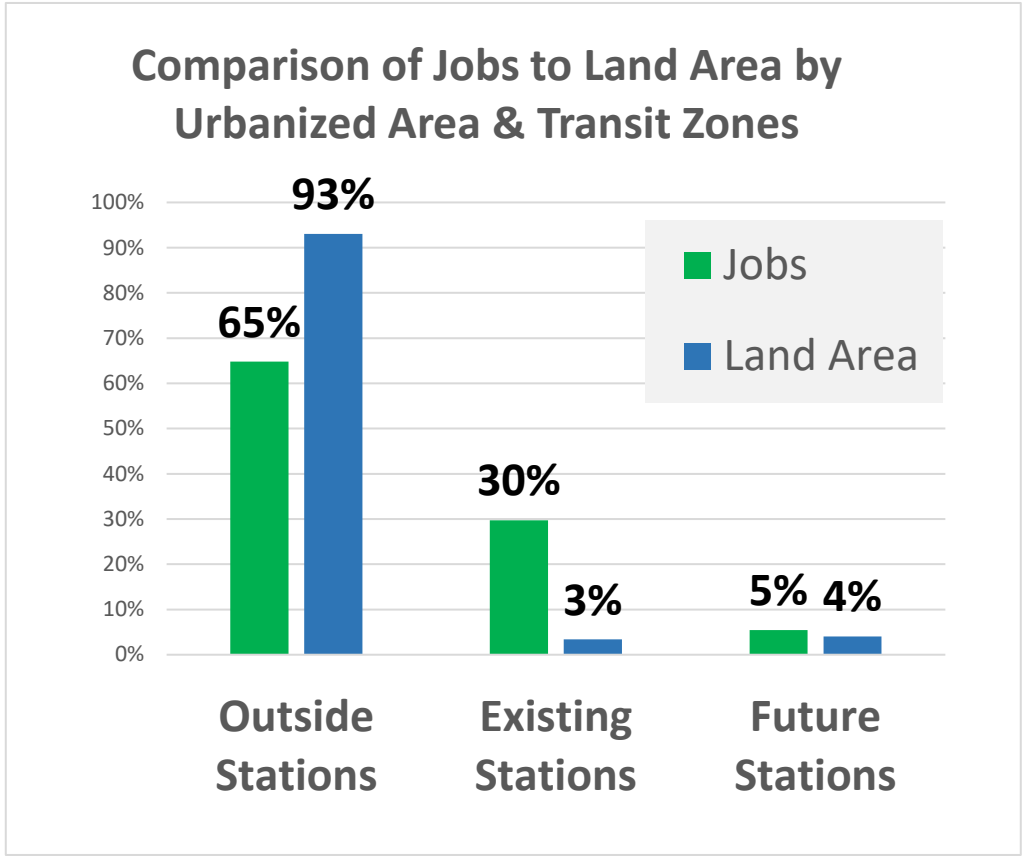


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Jobs were densifying near transit more than housing



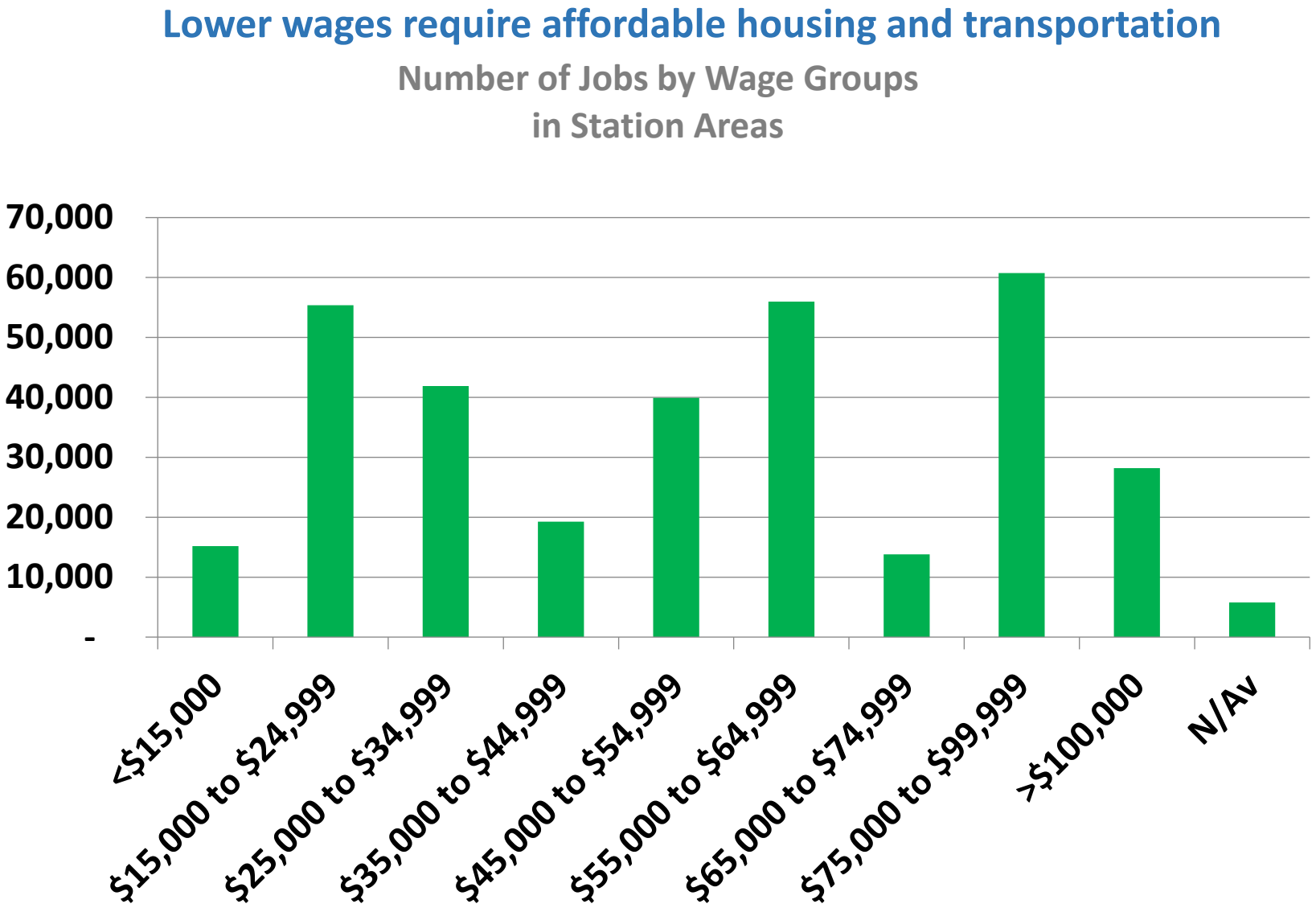
30% of region's jobs are in current station areas on just 3% of urbanized land

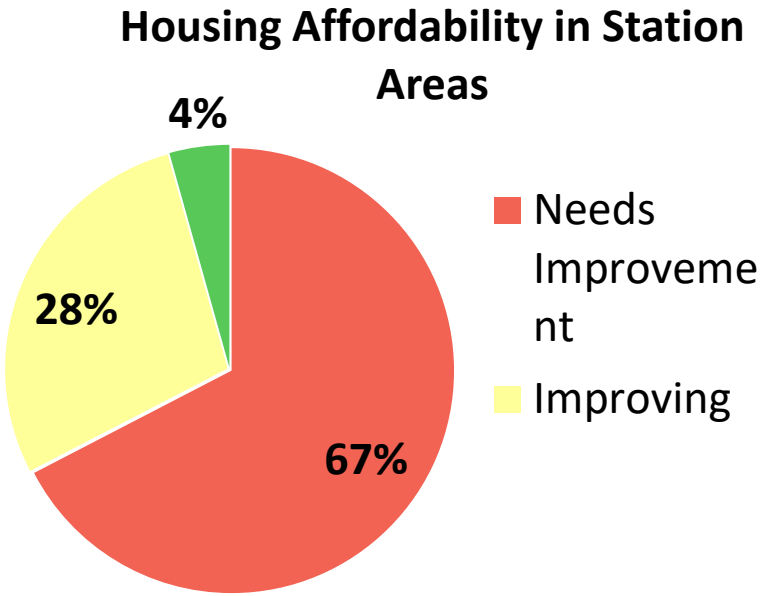


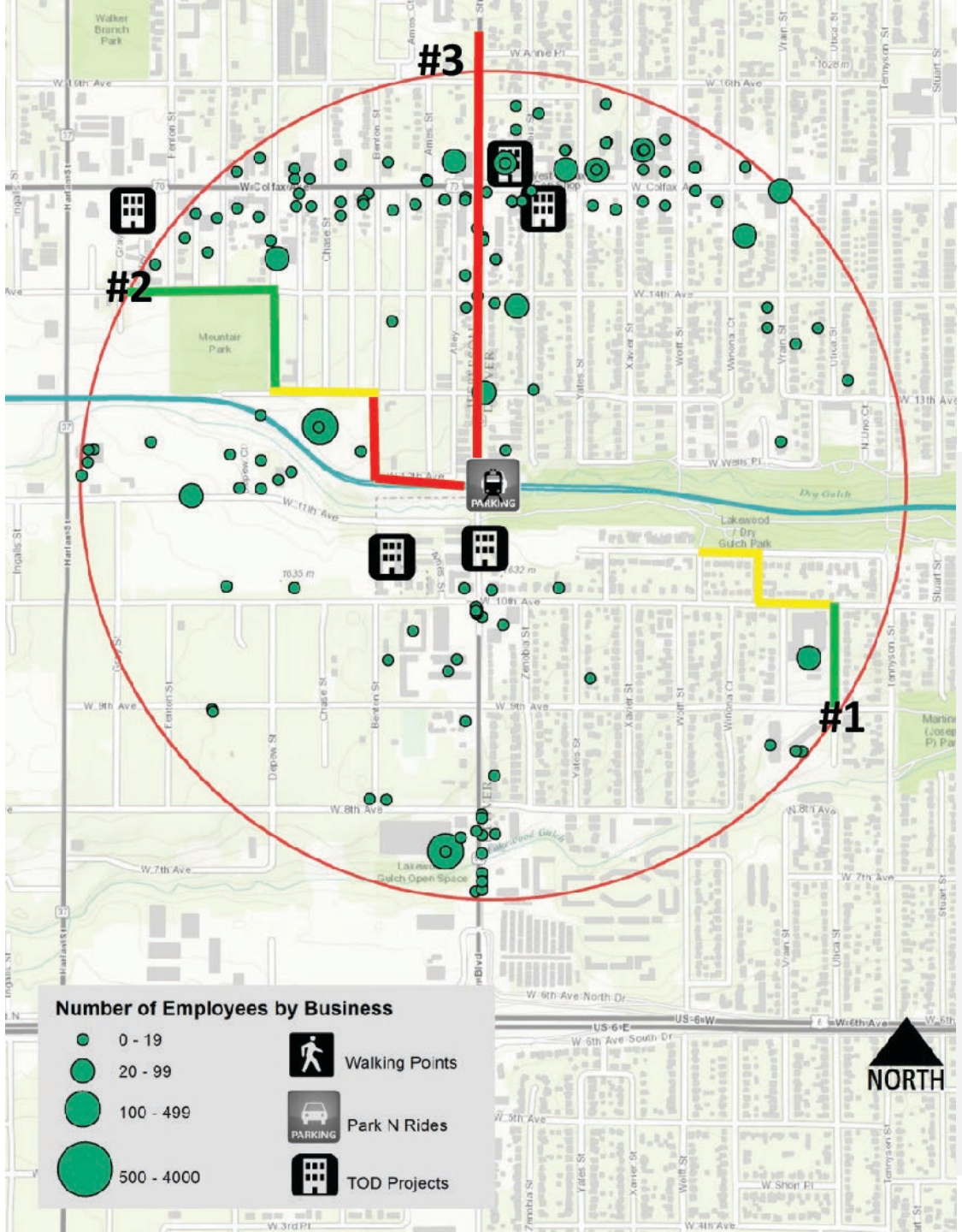
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67% of Jobs in Station Areas pay less than $65,000, but only 4% of stations had housing costs affordable to those wages

Lower wages require affordable housing and transportation





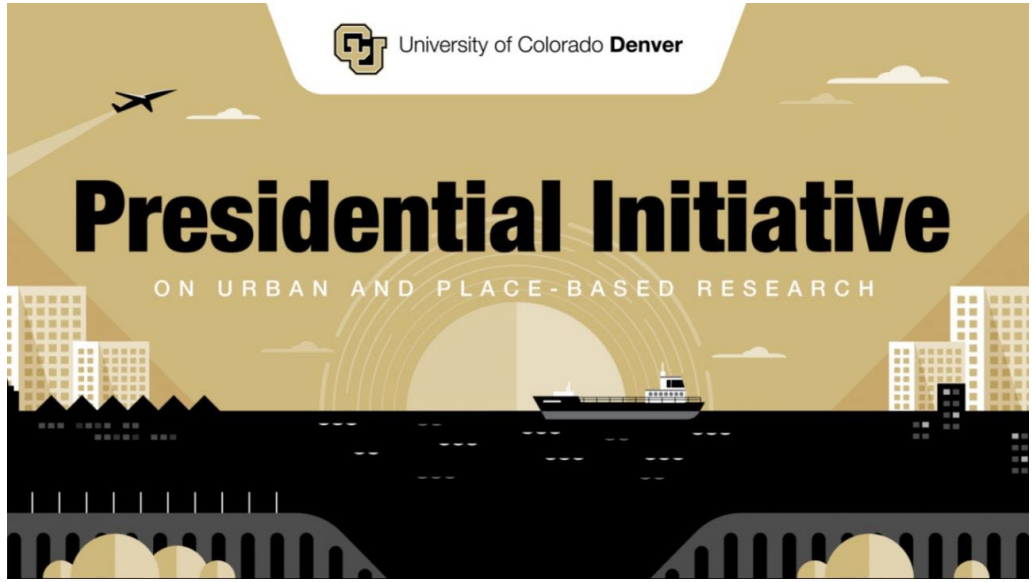


Walkability Results

- **Walked 131 miles**
- **62% of walks were poor or fair**



Phase II Financial and In-kind Supporters: 2021-present



$20,000
September 2021 - August 2023
"Seeking Housing Affordability in the Denver Metro Area: Detailing the causes and outcomes of the housing crisis to inform local and national solutions"

MERCATUS CENTER
George Mason University

$20,000, Denver Metro portion of National Zoning Atlas

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DENVER REGIONAL COUNCIL OF GOVERNMENTS

Invited talks, letters of support, dissemination of findings

ULI Colorado

$5,000, 2023-2024
Terwilliger

MDHI

Data sharing



Phase II: A Perfect Storm: Impacts on Housing Affordability in Metro Denver

Causes and Consequences

National affordable housing crisis

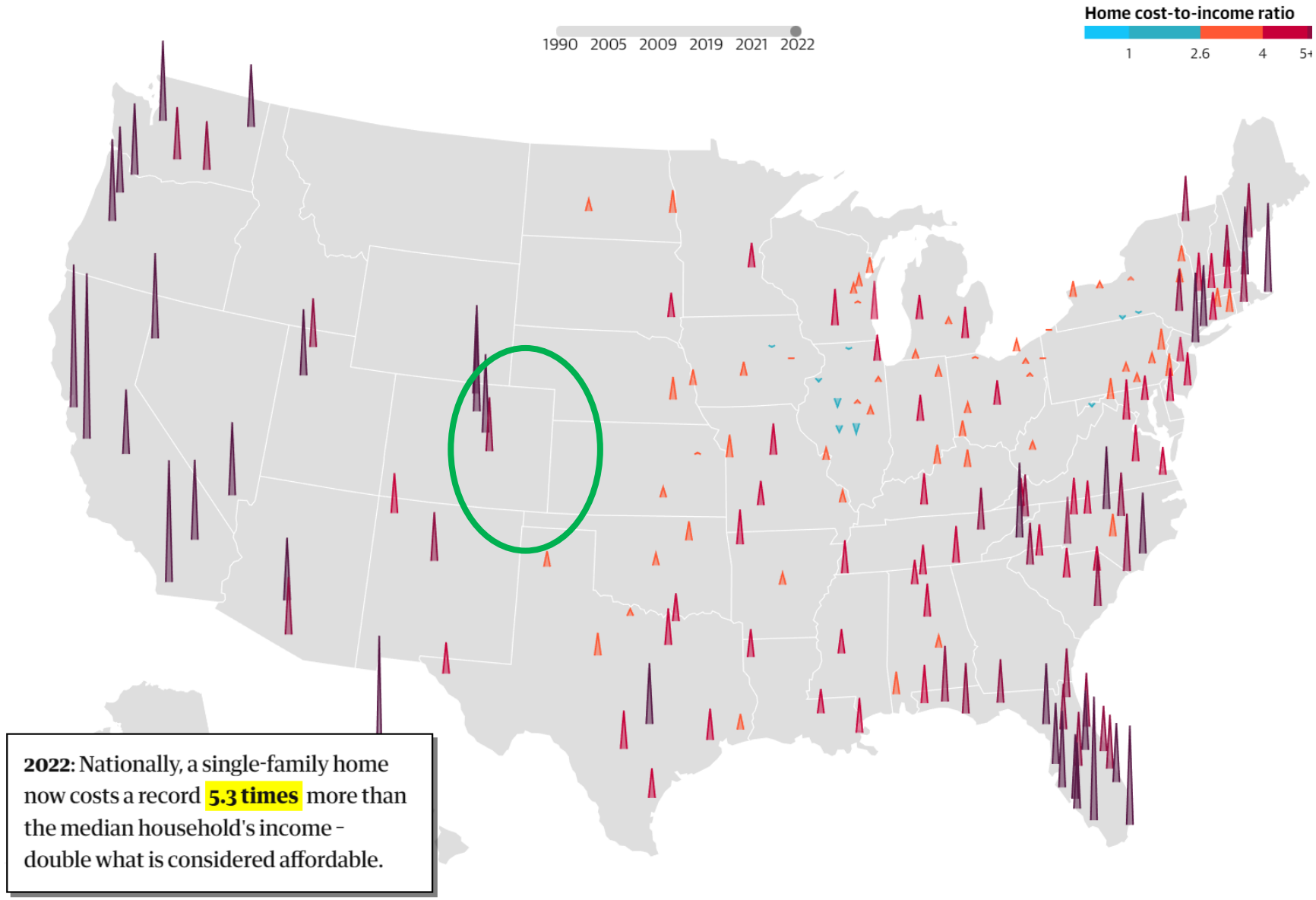
Extensive research documents the national housing crisis

Denver Metro:

Home price vs. income

- 1990: 2.5 x income
- 2009: 3.7 x income
- 2019: 5.4 x income
- 2022: 7.1 x income

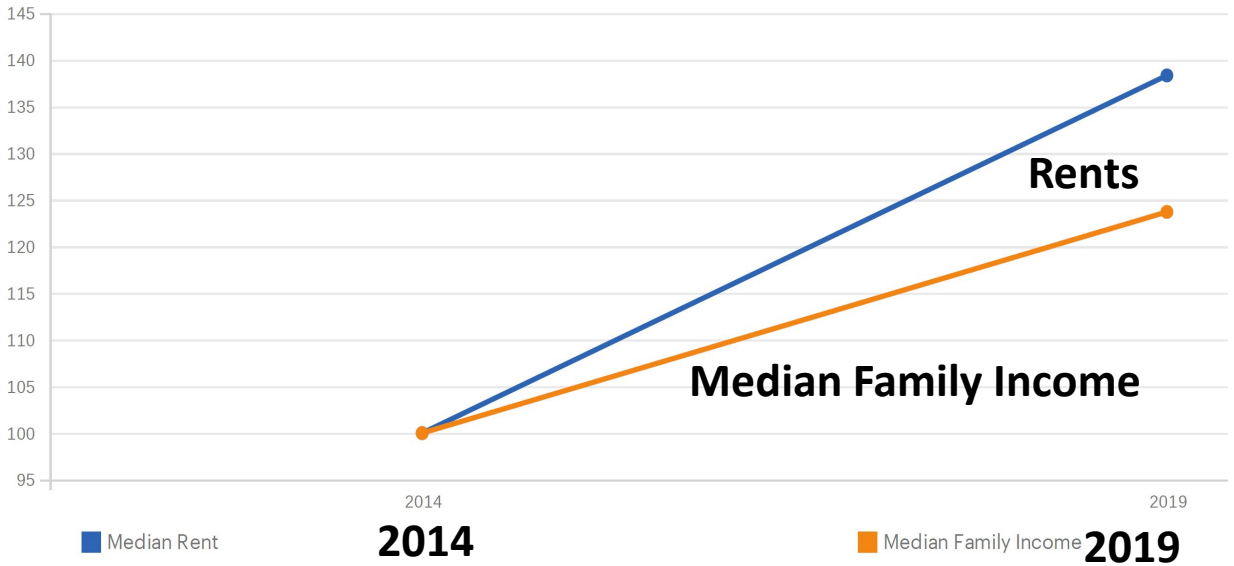
Boulder is now 8.7 x income



Source: https://www.theguardian.com/us-news/2023/may/10/us-housing-market-prices-increasing

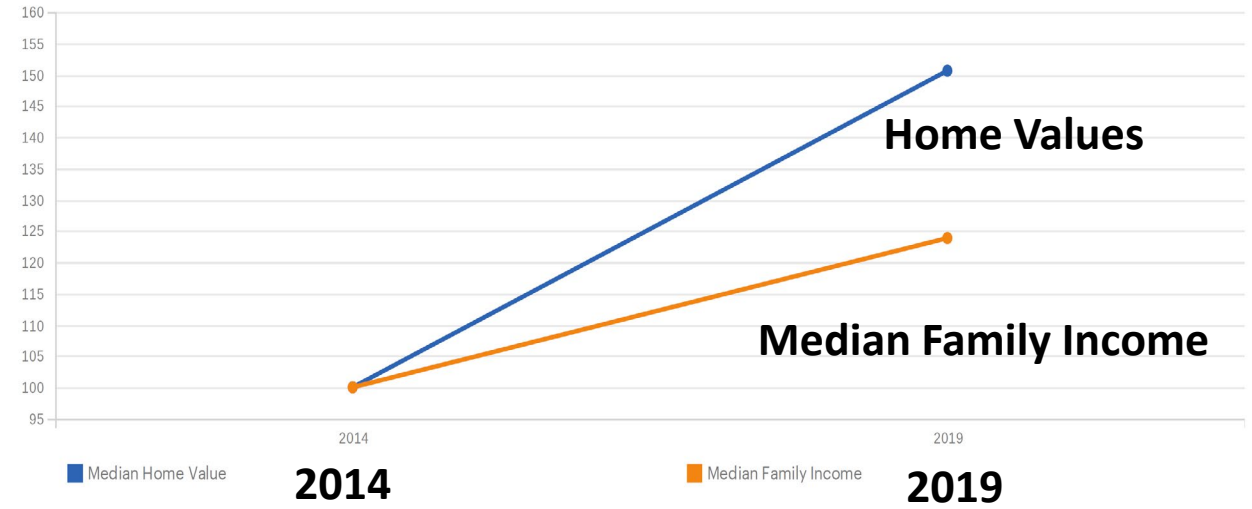
Metro Denver's Housing vs. Income 2014 to 2019

- **~400,000 households** (30%) were housing cost burdened/extremely burdened
- Regional Housing Price **increases** were among the **top 5 in the U.S.**
- In 2022, Colorado had **250,000+ job vacancies** (many employers pointed to housing issues)



Source: Census
2010-2014 - 2015-2019 Data Contains: 1 Metro Area

Median Home Value Versus Median Family Income (Indexed) 2014 to 2019



Source: Census
2000 Data Contains: 9 Counties
2010-2014 - 2015-2019 Data Contains: 1 Metro Area

The need for a *regional* study







Research questions

- DATA ANALYSIS **RQ1:** Is it possible to **identify local and sub-regional patterns in housing developer responses to various local, economic, regulatory, and demographic conditions** through a longitudinal and in-depth analysis of the **number, type, price, and fine-grained location** of housing units throughout the region over a 15-year period (2005-2020)?

- INTERPRETATION **RQ2:** Will the detailed results from RQ1 allow for meaningful and **targeted focus groups and *interviews* with developers, financiers, and planners** that result in a comprehensive and nuanced understanding of why the market developed certain types of housing in specific locations at certain times?

- RESPONSE FROM DECISION MAKERS **RQ3:** In what ways might detailed local housing gap data for all jurisdictions in the region **affect collective decision making on policies or** principles regarding affordable housing by **the 58 members of DRCOG's Board of Directors?**

- PUBLIC MESSAGING **RQ4:** What experiences, characteristics, or other circumstances explain housing precarity for households experiencing homelessness, or at risk of becoming homeless? How might these **individual experiences be explained to the general public** in relation to the study's findings in order **to gain community support for more affordable housing?**

Study Strategy

- Identify multiple and cumulative causes for the affordable housing shortage at fine geographies through plans, zoning codes, permits, and parcel data
- Ground quantitative findings and solutions through interviews with planners, financiers, developers, elected officials, nonprofits, renters, and others
- Illustrate the impacts on individuals, households, employers, communities, and environment
- Craft short- and long-term solutions at multiple scales across sectors, and build a coalition to achieve regionwide commitment

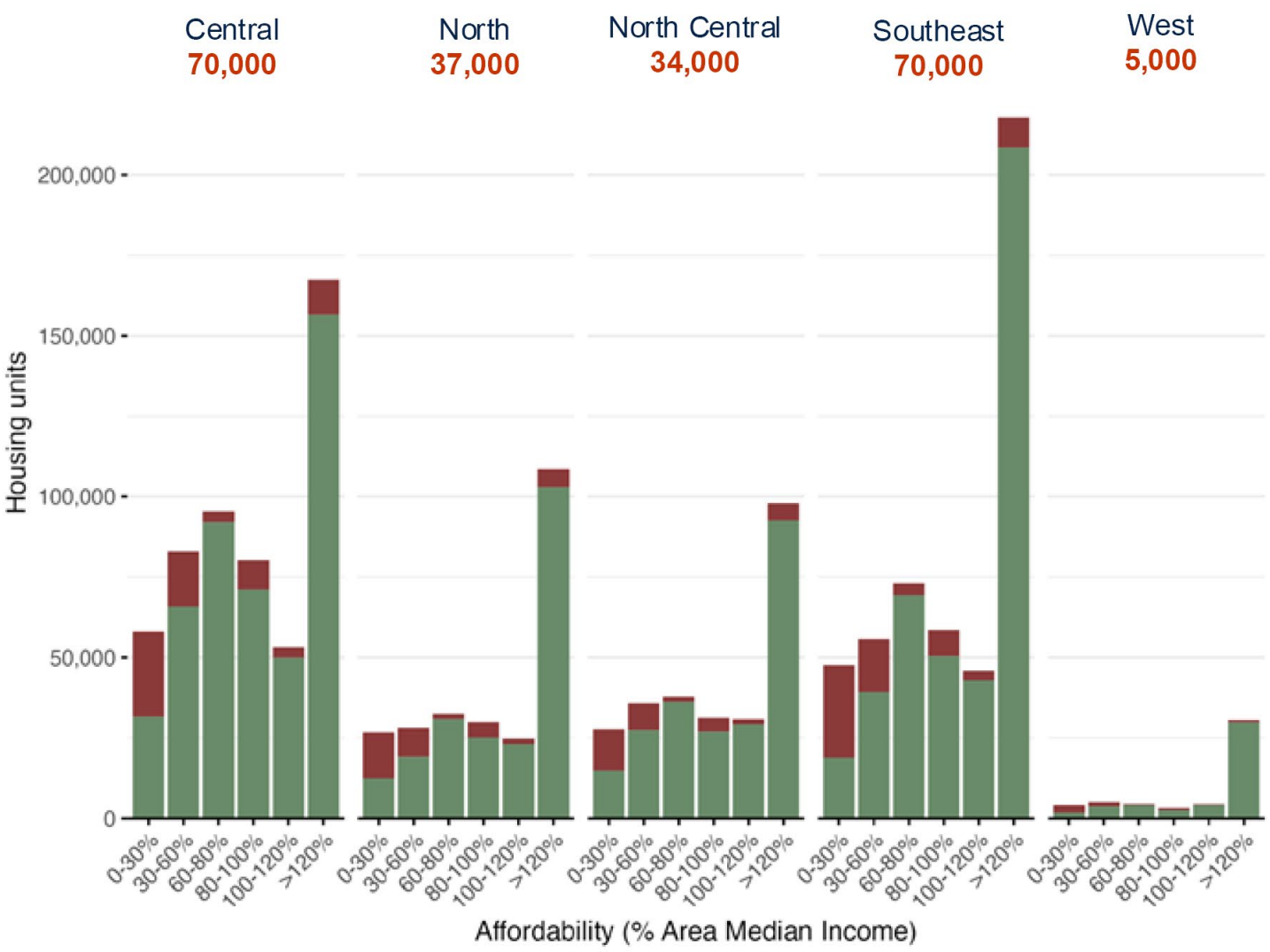
Goal: Spur concrete action and commitment to address the region's significant affordable housing needs *(i.e., "crisis")*

History: Pre and Post Great Financial Recession (GFR)

1. After the GFR: Housing Unit **production** significantly declined, while population didn't.
2. **70% of zoned land** in the Denver Region prohibits the type and price of housing we need for households now, *and in the future*.
3. **Housing/Jobs Mismatch** and inability to use transit is greatest for workers with low-wages.



Housing needs by submarket, 2023–2032



TOTAL
216,000



Group
- Existing units
- Distributed RHNA units

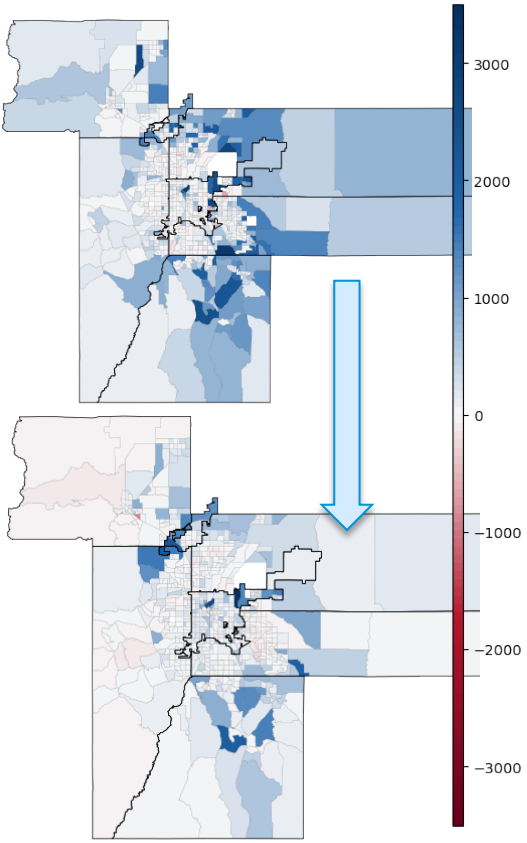
- Differences across the **submarkets highlight the imbalance of housing demand** across the region relative to existing supply and affordability.

Source: ECOnorthwest analysis; DRCOG synthesis of State Demography Office 2022 Household Forecast and U.S. Census Bureau, American Community Survey 5-year 2013 Public Use Microdata Sample estimates; Metro Denver Homeless Initiative State of Homelessness Report, 2022–2023; DRCOG 2020 Small-Area Forecast

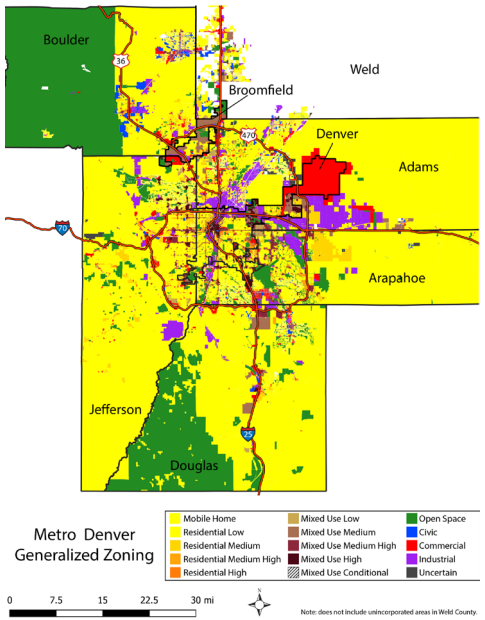
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Phase II Big Picture: A Perfect Storm since 2010

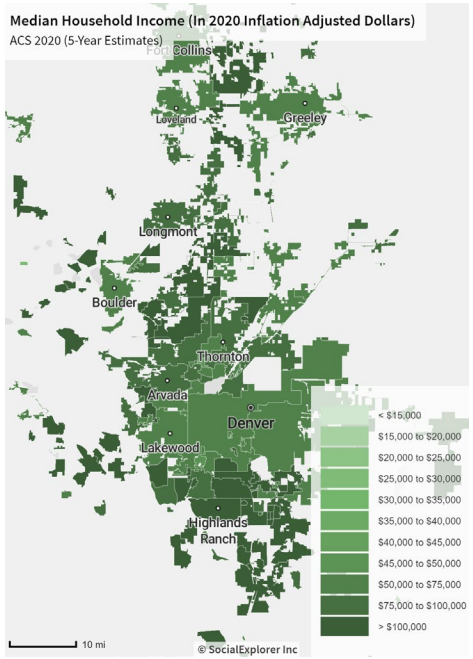
Housing Unit Production declined from 2010-19



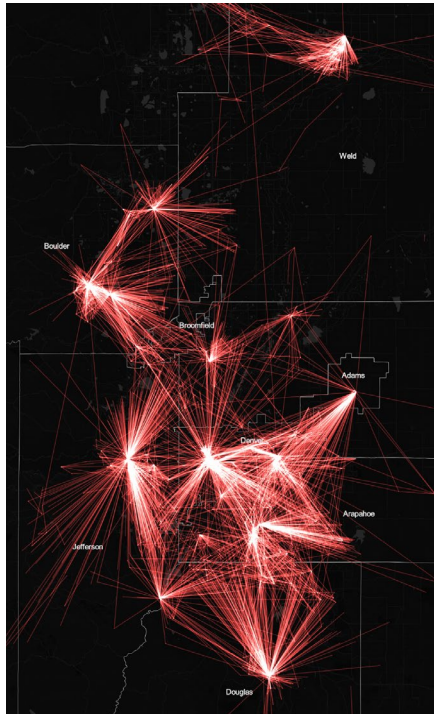
70% of region (4,569 sq mi) is zoned SF detached housing



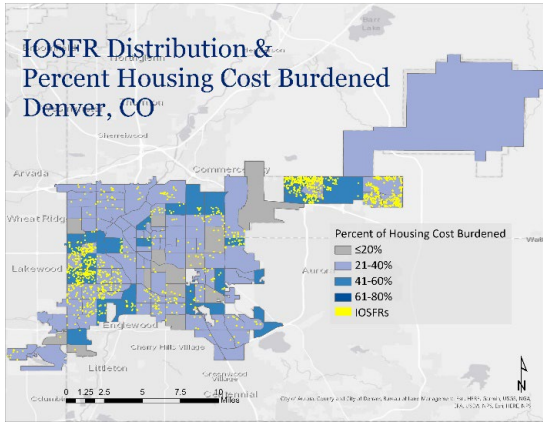
Increased Income polarization with Population Growth



Job growth in places without affordable housing and vice versa



Institutional investment in housing stock for Short- and long-term rentals



Source: M. Coddington, 2021

Market Contraction + Development Restrictions + Pop. & Job Growth + Institutional Investors=

Housing Costs > Income, rise in homelessness, long commutes

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Other Affordable Housing production challenges

- Land prices
- Interest rates
- Labor shortages
- Material production and delivery problems
- Rapidly increasing insurance premiums
- Operating costs
- Greater demand and competition for financing sources
- Empowered citizens who oppose higher densities, “those people”, and change in general

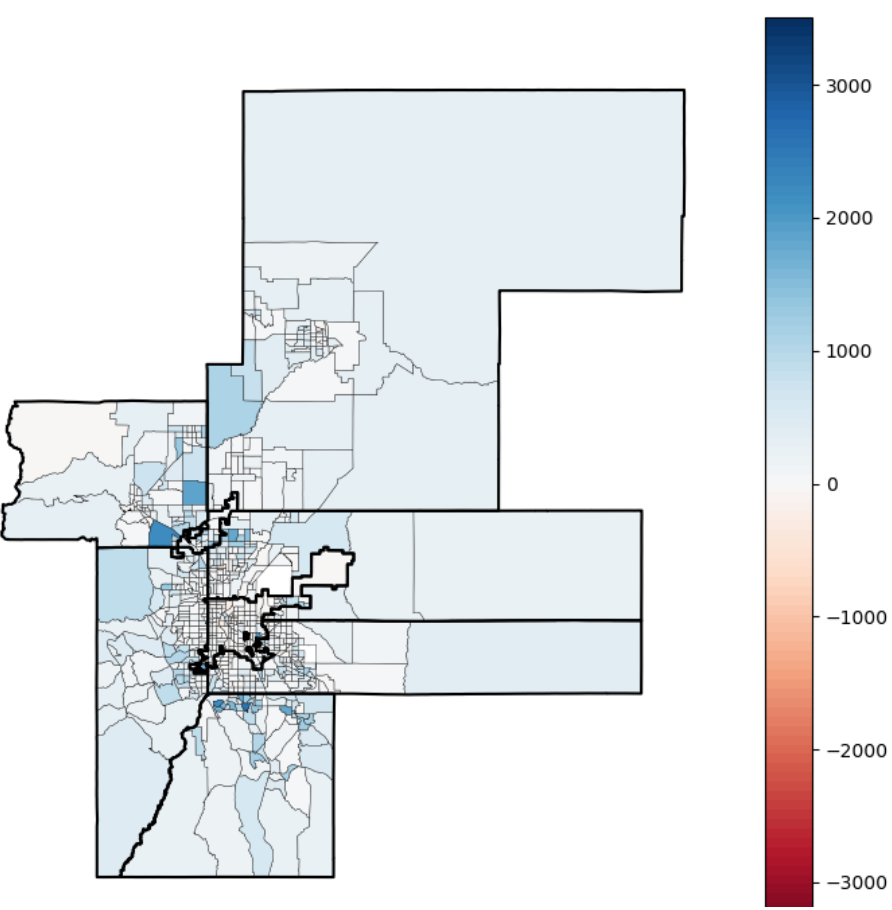
Rodger Hara, Colorado Real Estate Journal, August 2024

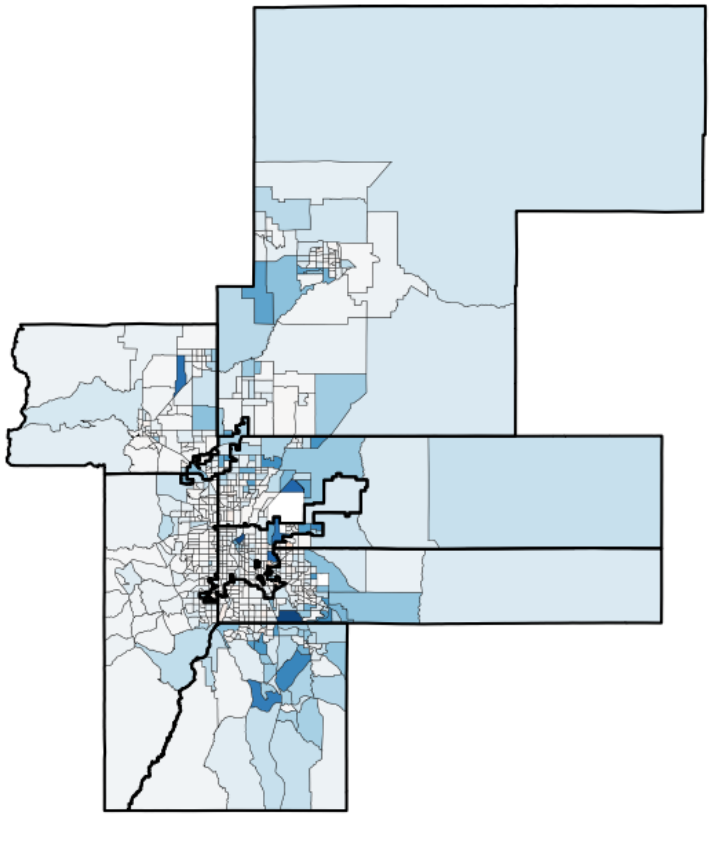
Storms have a worse effect on shaky foundations

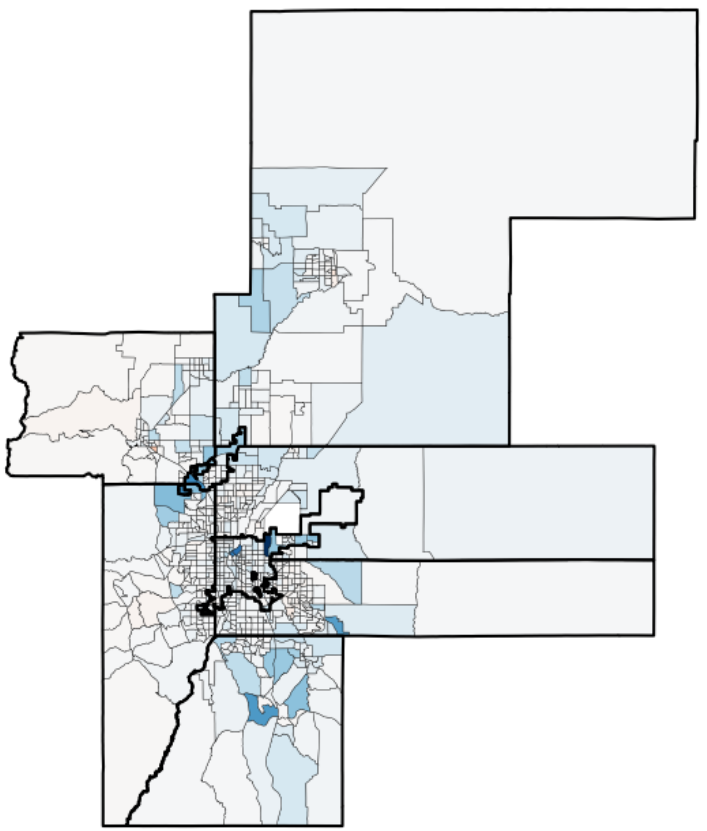
Consequences of the GFR: *Housing production declined in most cities*

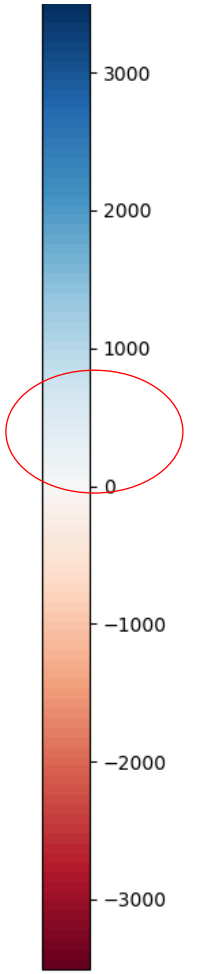
Housing production declined from an average of 3000/decade/city to 2000/decade/city

Lenders tightened mortgage requirements, developers left or were bankrupt, people lost homes to foreclosures









1990-2000

2000-2010

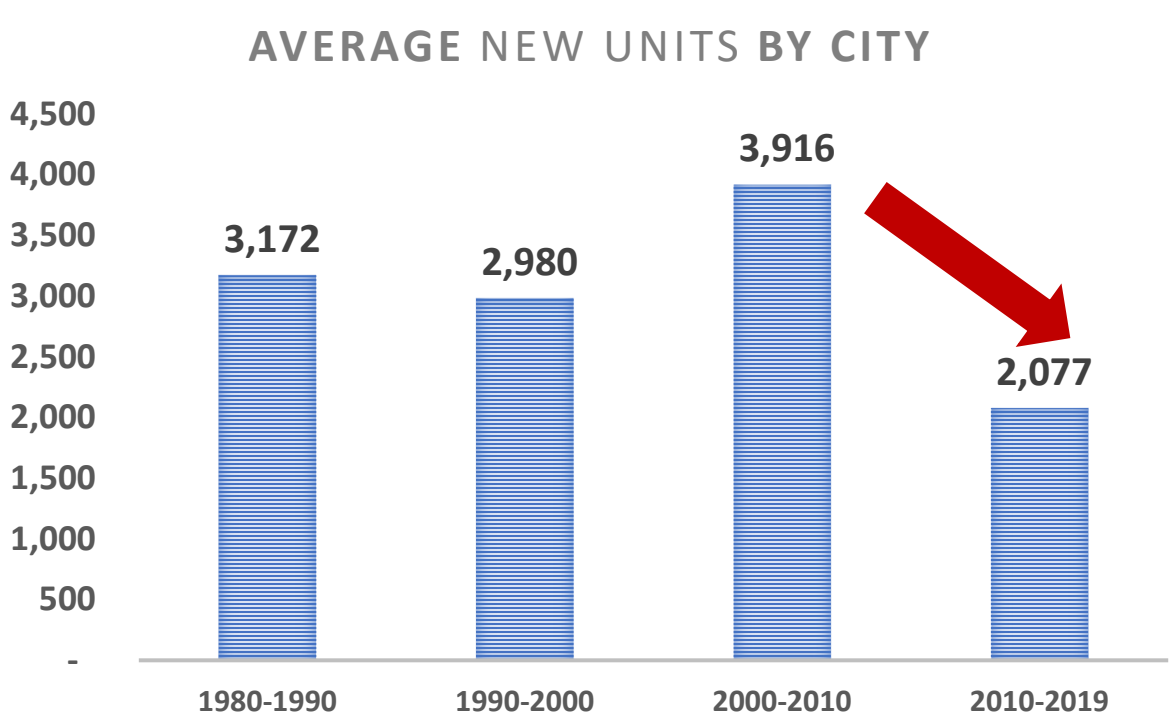
2010-2019

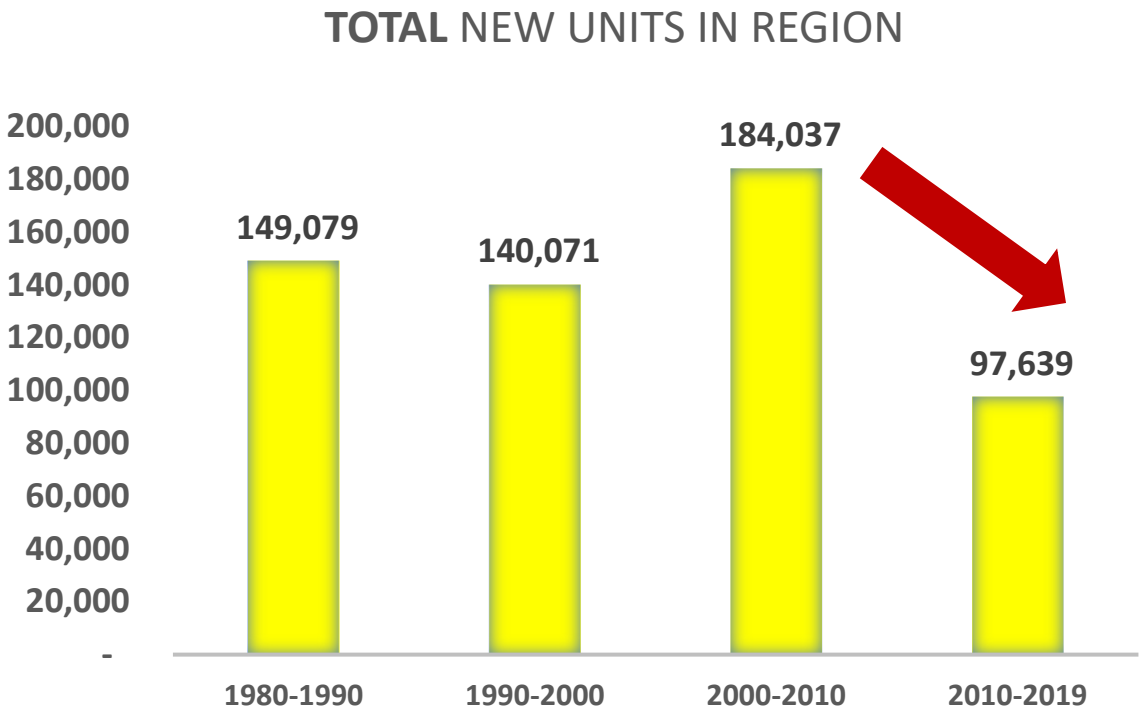
*Based on summed data from Markley, S.N., Holloway, S.R., Hafley, T.J. *et al.* Housing unit and urbanization estimates for the continental U.S. in consistent tract boundaries, 1940–2019. *Sci Data* **9**, 82 (2022).

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Consequences of the GFR: *Housing production decline regionwide*

NEW UNITS EACH DECADE IN DENVER METRO



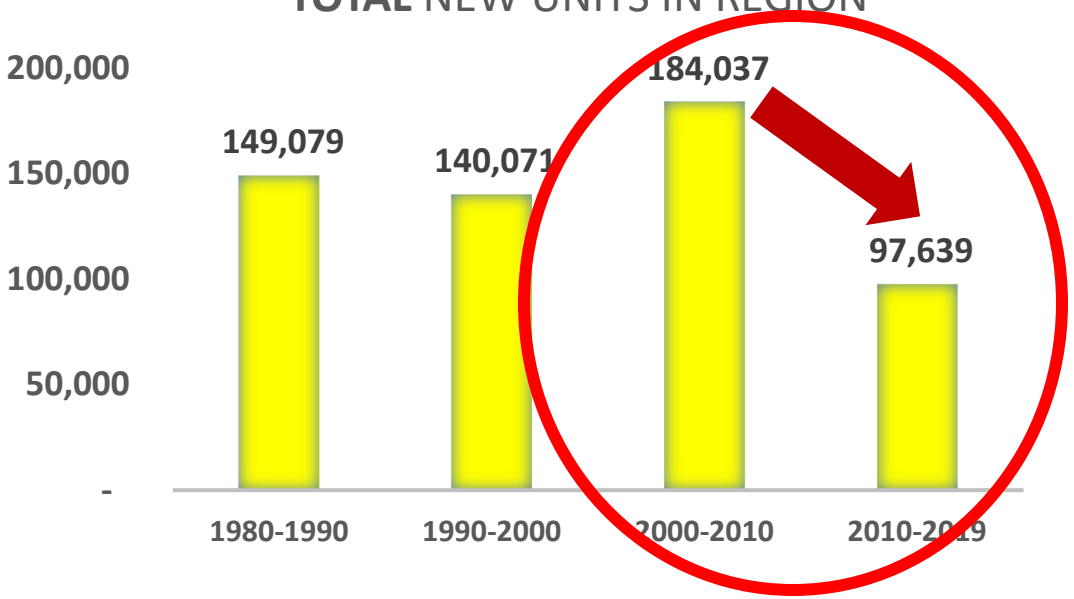


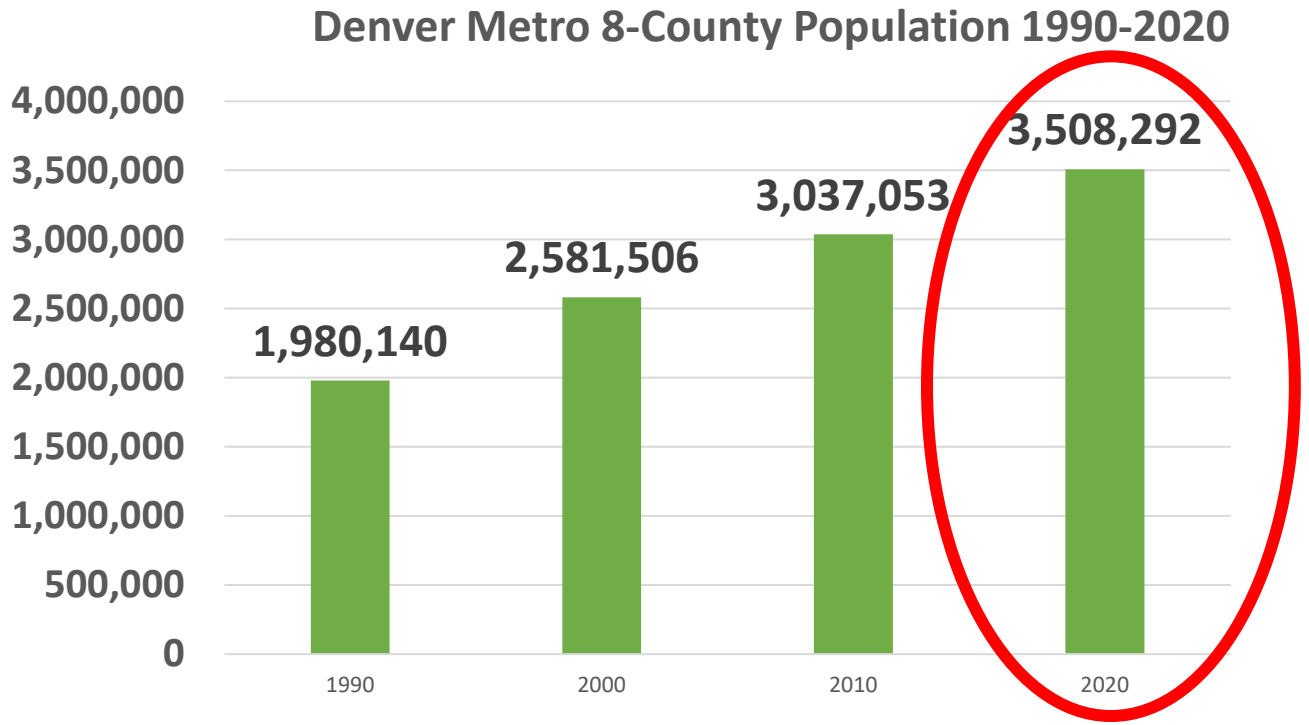
*Based on summed data from Markley, S.N., Holloway, S.R., Hafley, T.J. *et al.* Housing unit and urbanization estimates for the continental U.S. in consistent tract boundaries, 1940–2019. *Sci Data* **9**, 82 (2022).

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Population growth vs. housing growth & incomes

#1. Decline in Housing Production: *In the same decade (2011-2020) that we built half as many units, we gained another 471,000 people.*





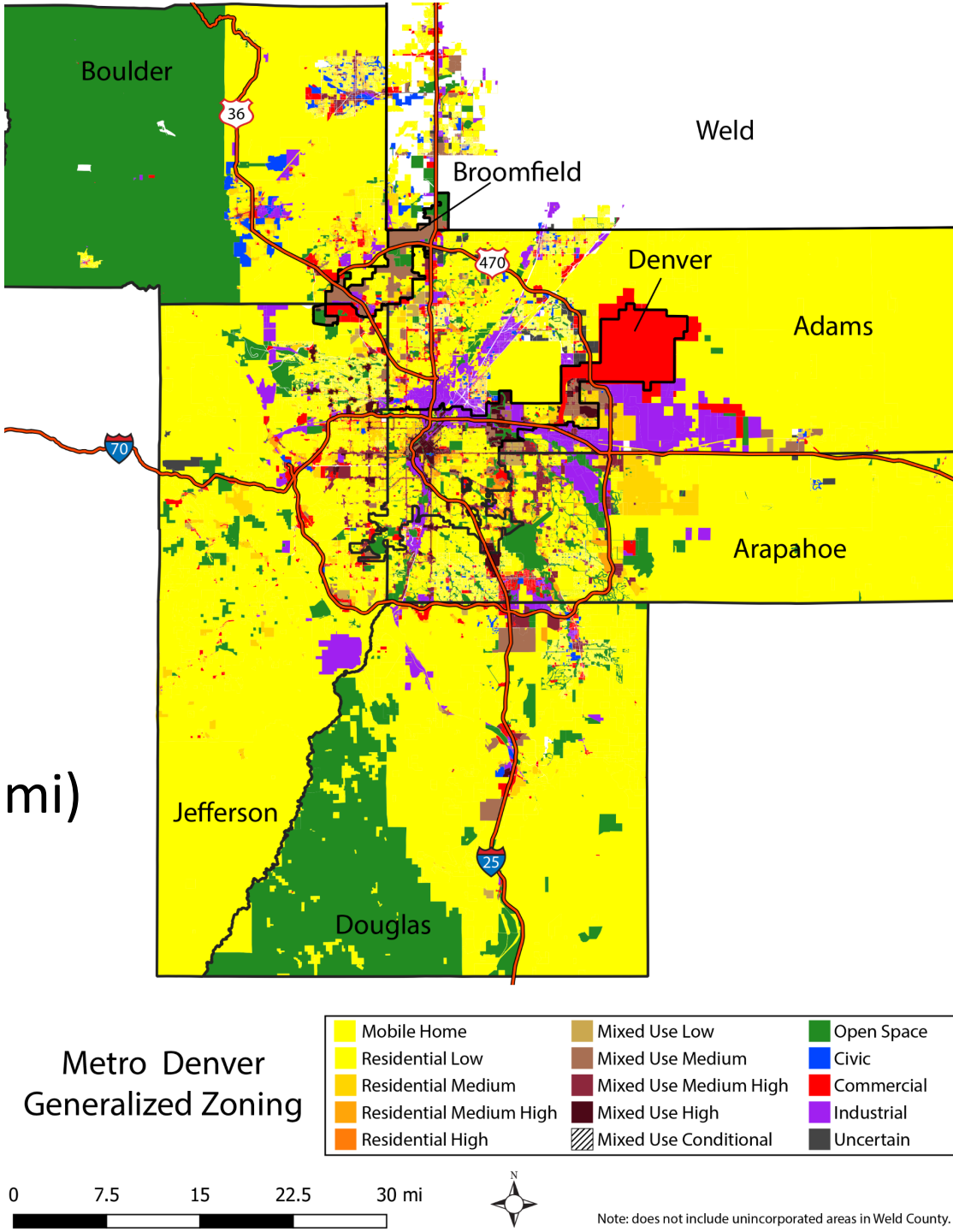
Influences on housing unit counts & land costs

Zoning in Metro Denver mostly permits large single family detached homes

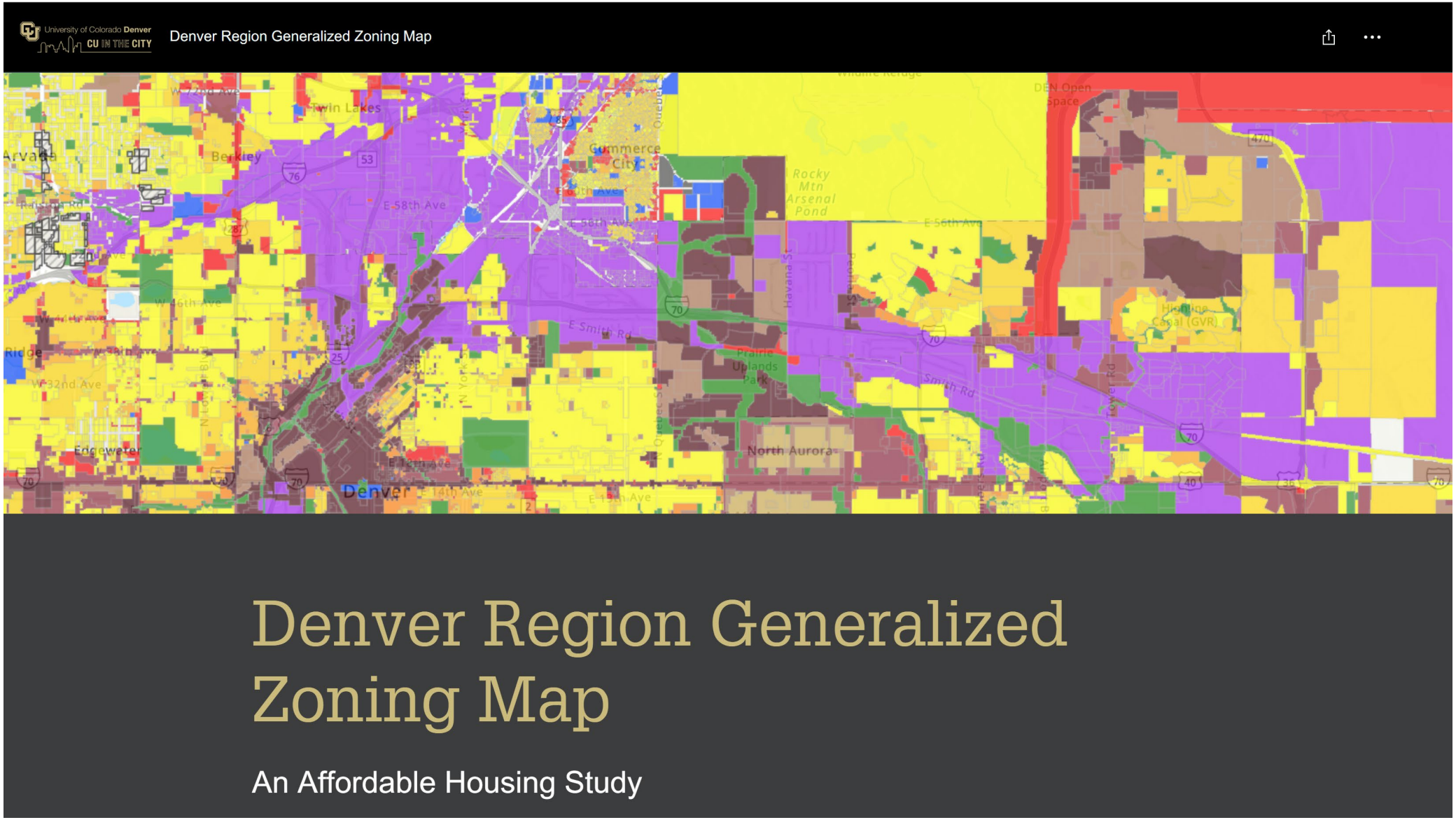
We categorized each jurisdiction's zoning into 15 categories (100,825 zoned polygons)

Land for low density Single Family Residential:

- 70% (3,209 sq mi) of all zoned areas (4,569 sq mi)
- 93% of all residential-only land
- 19% of incorporated land

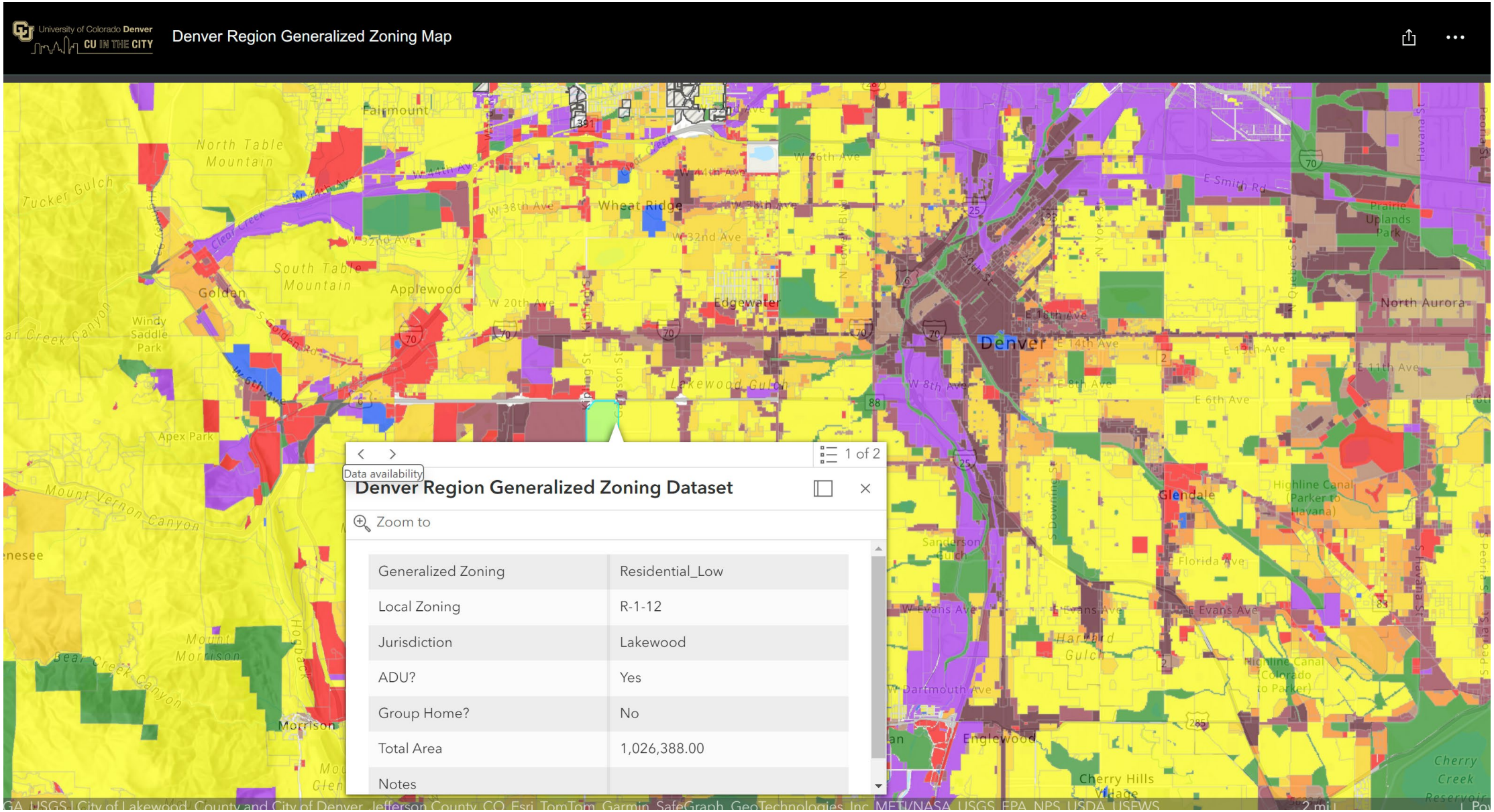


Data availability



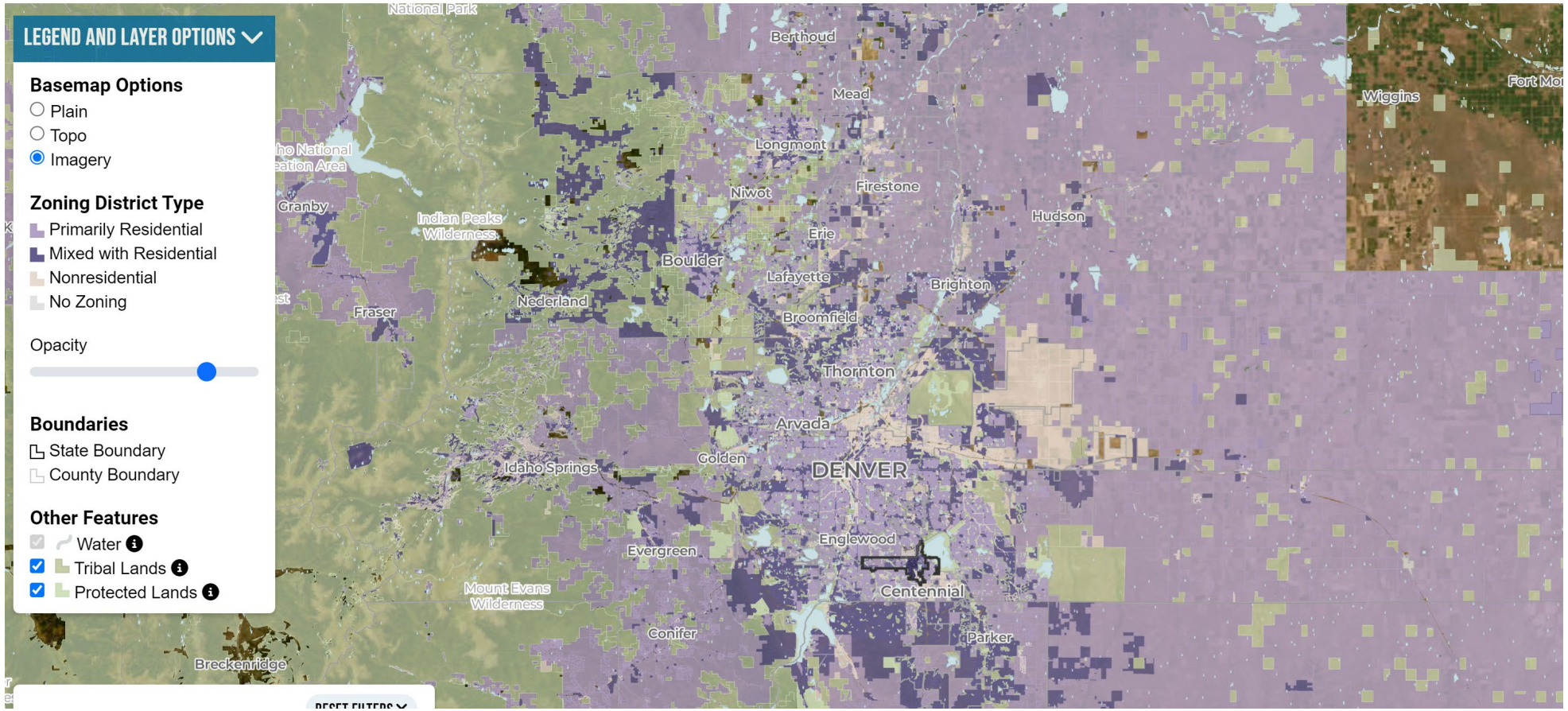
https://bit.ly/DenverRegionalZoning

Data availability



https://bit.ly/DenverRegionalZoning

We also contributed to the National Zoning Atlas: A national movement to map the country's zoning codes



Zoning Consequences:

Limits construction of "missing middle" housing

1) Developers target same small markets: high-income households with kids | high-income singles

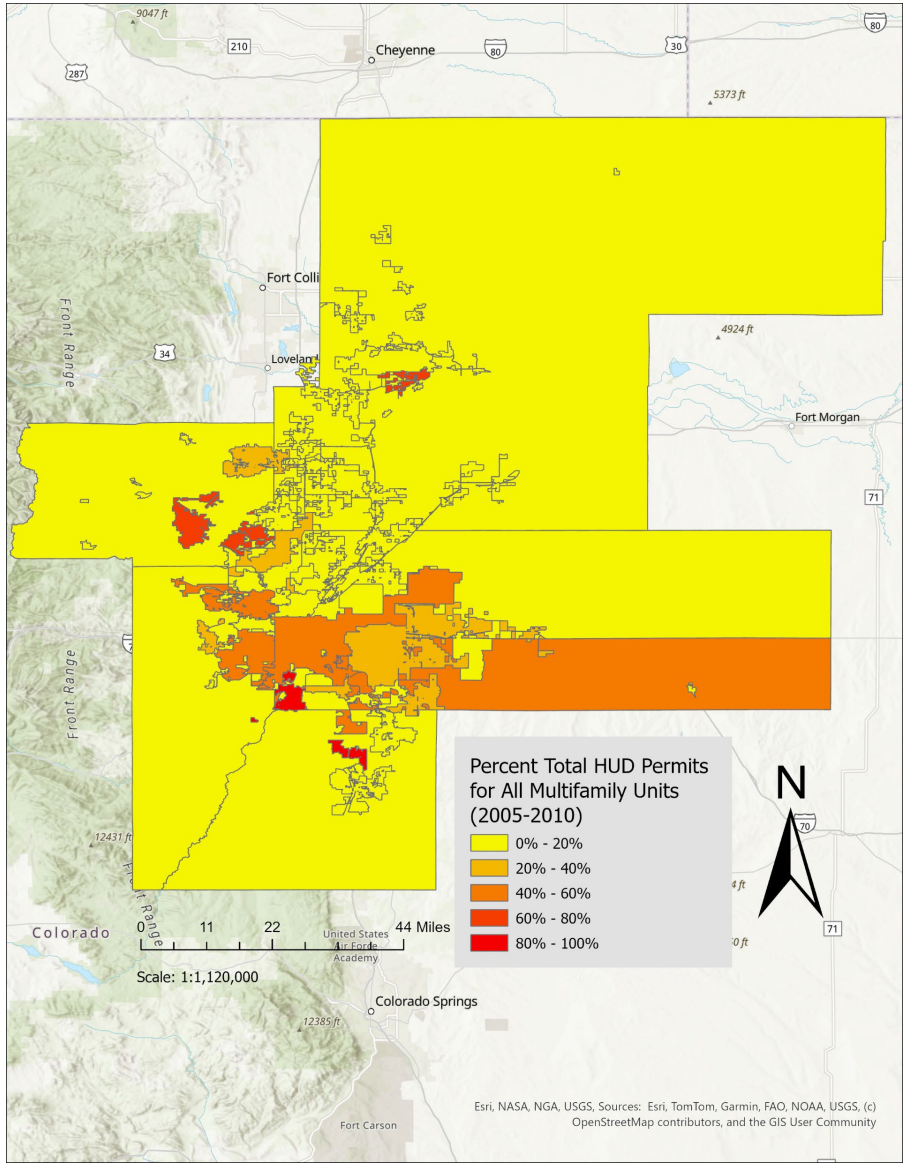
2) Zoning does not reflect demographics and need for the "middle" housing type
   - Only 2.2% of housing permits from 2005-2024 were for the "middle" type (2-4 units)
   - 2-9 unit housing structures are just 9.2% of existing housing in the region

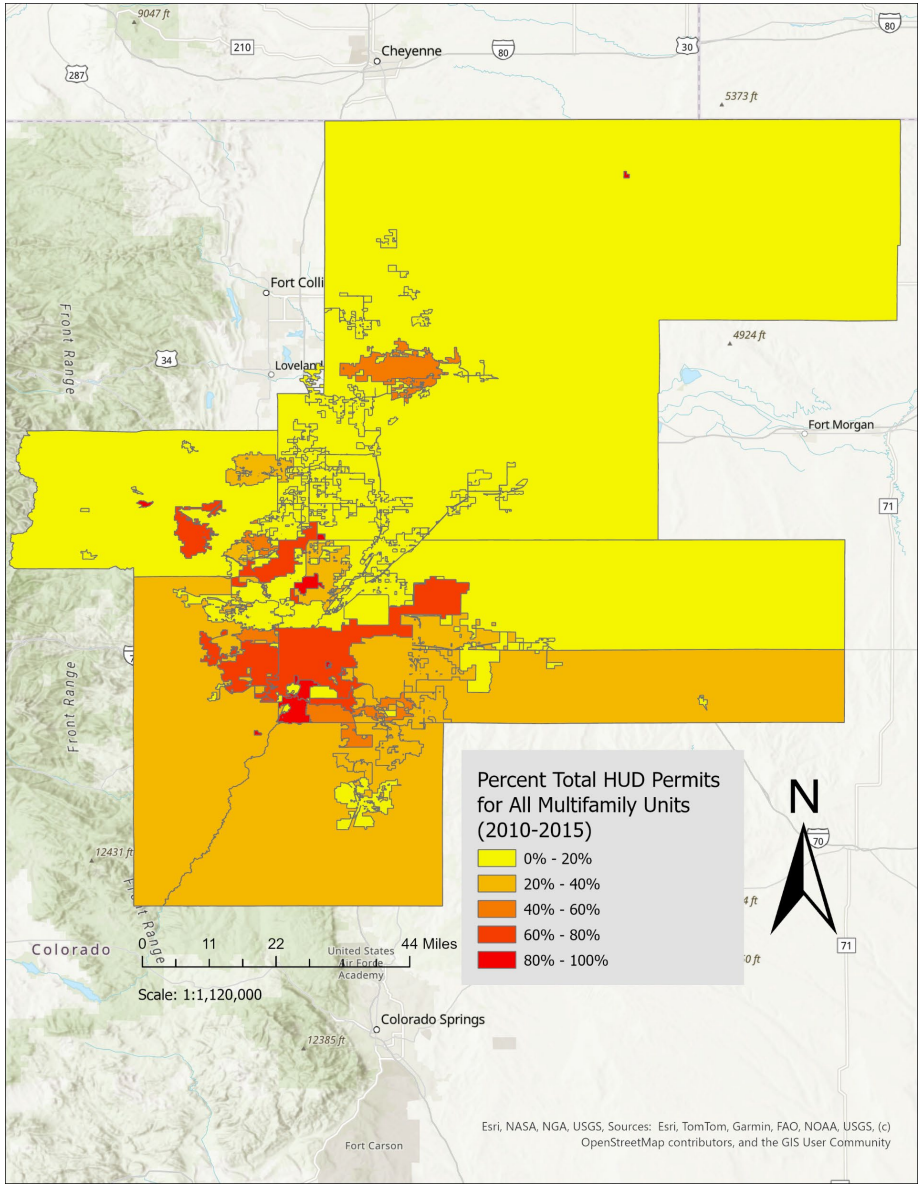
3) Building codes also prevent affordable construction of 3-6 story buildings, "single stair".

Figure 1. The Spectrum of Housing



Multi-family permits 2005-2010



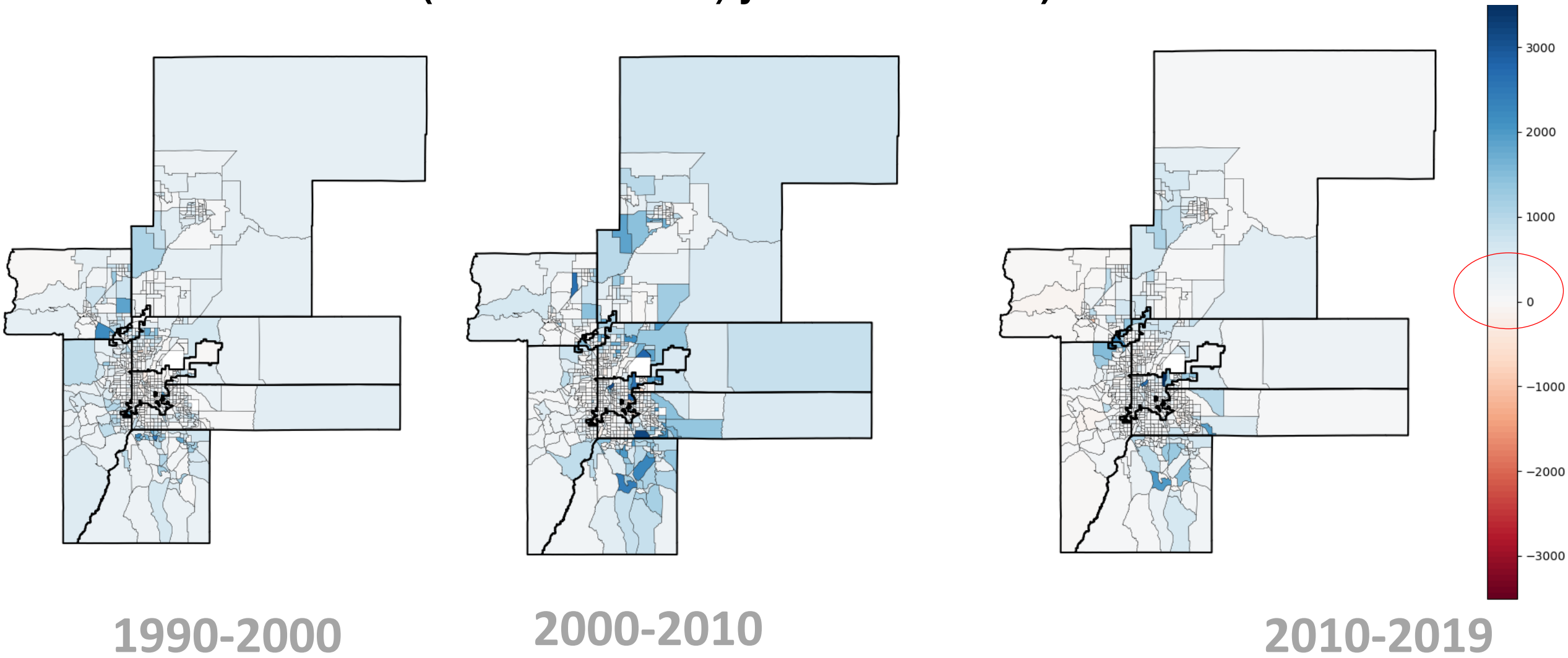


Source: HUD PD&R, State of the Cities Database

Housing Data

Mismatched by size & price…and not enough

Annual Housing Production declined in most cities
(from 1000-2000/year to 0 to 1000)



1990-2000

2000-2010

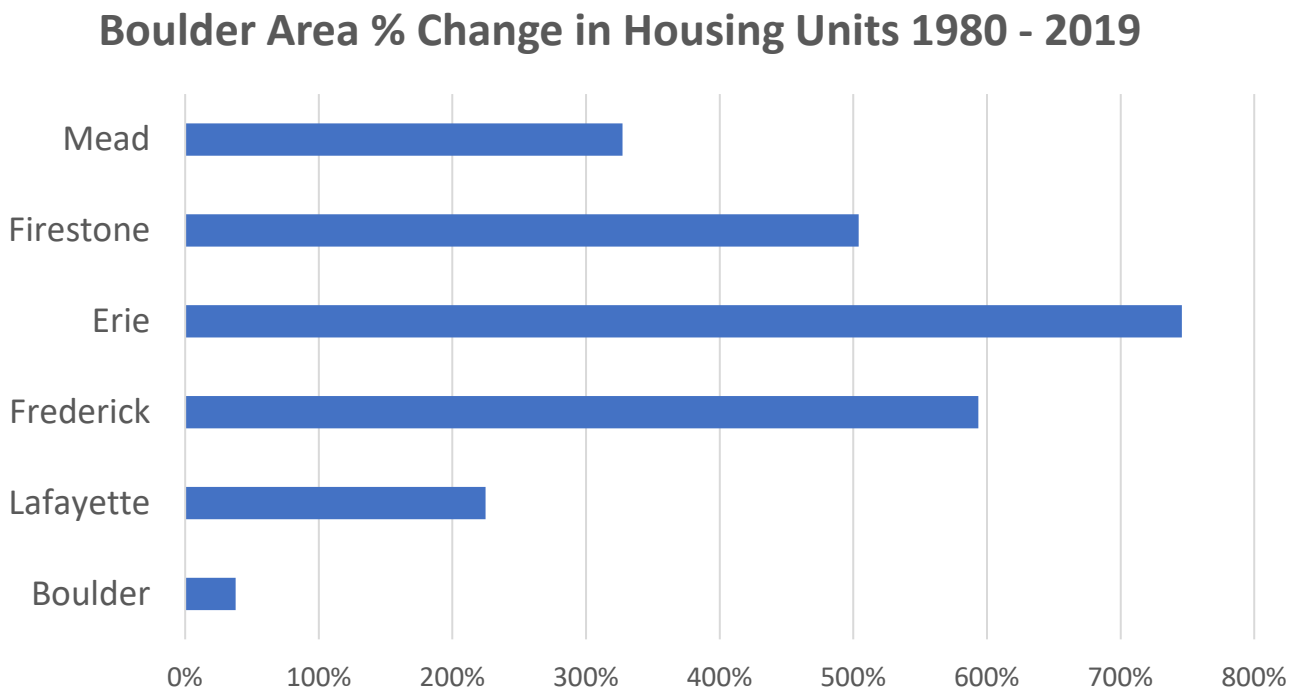
2010-2019

Based on historical normalized census tract data* on housing units from 1990-2019

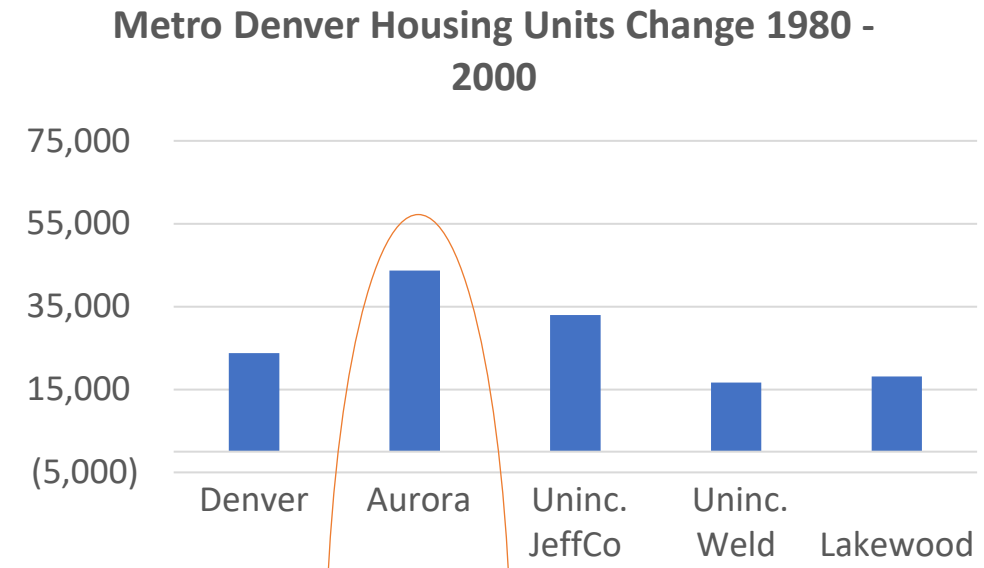
*Markley, S.N., Holloway, S.R., Hafley, T.J. *et al.* Housing unit and urbanization estimates for the continental U.S. in consistent tract boundaries, 1940–2019. *Sci Data* **9**, 82 (2022).

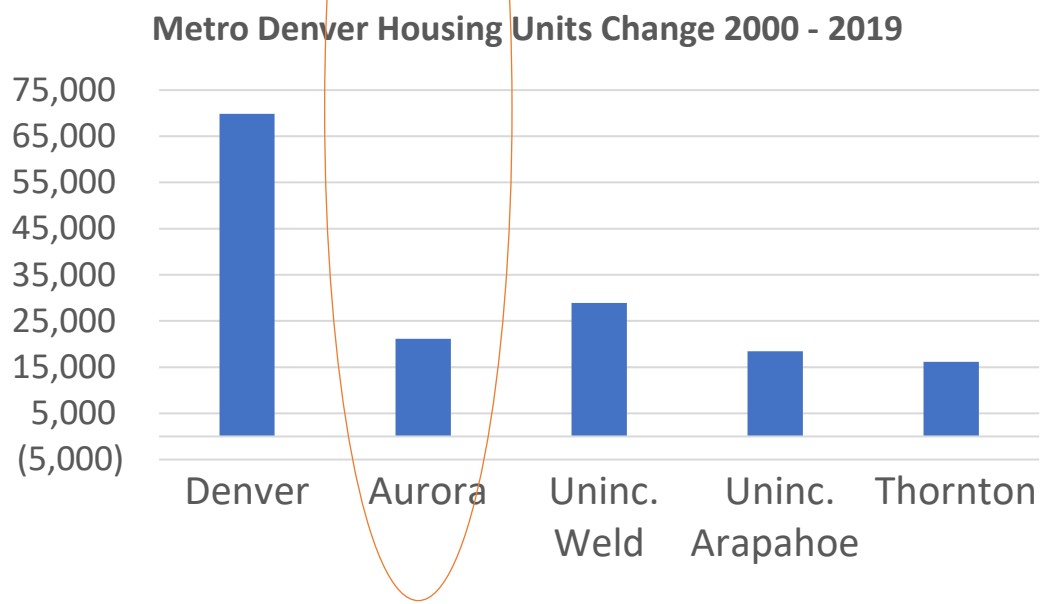
Housing Units 1980-2019

- Significant declines in certain counties and cities – growth controls, low density zoning, and other limits
- New growth in Denver and outer counties hasn't been enough



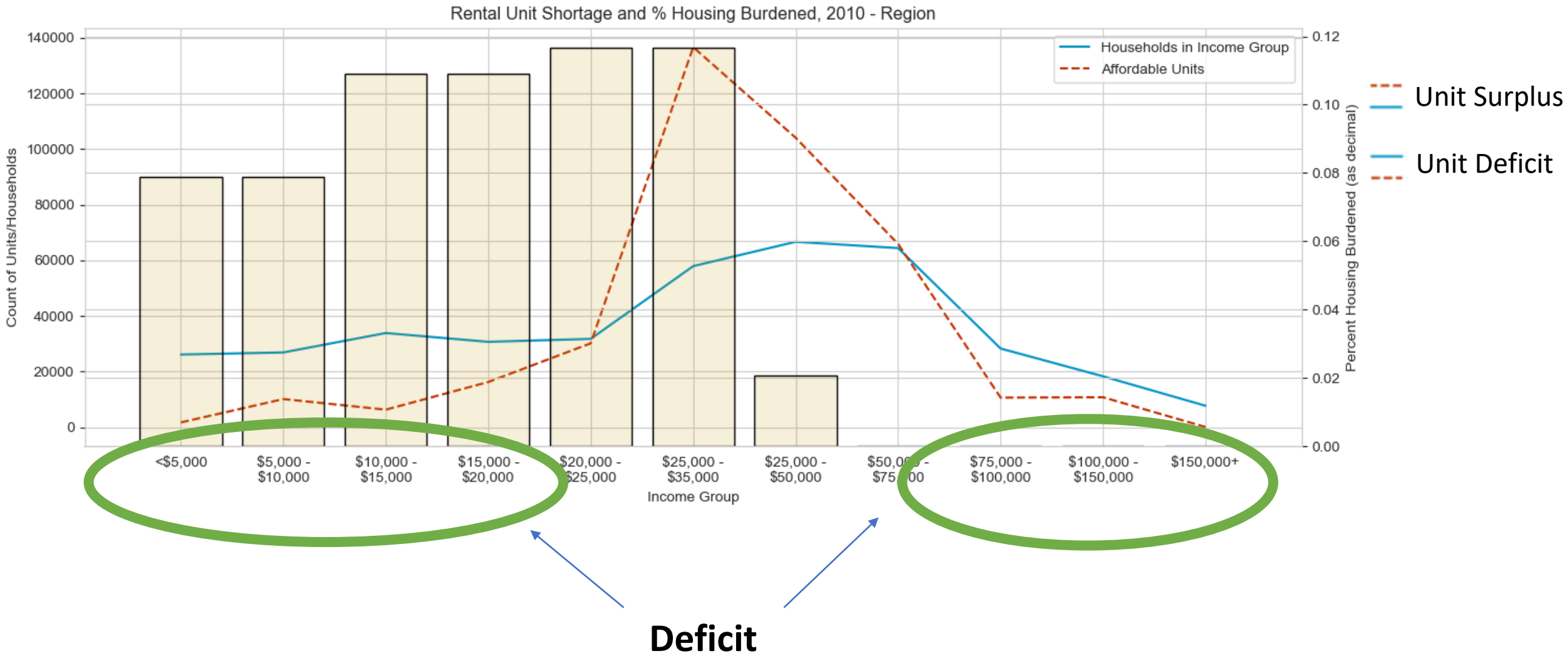
TOP FIVE JURISDICTIONS FOR HOUSING UNIT GROWTH 1980-2000 VS. 2000-2019



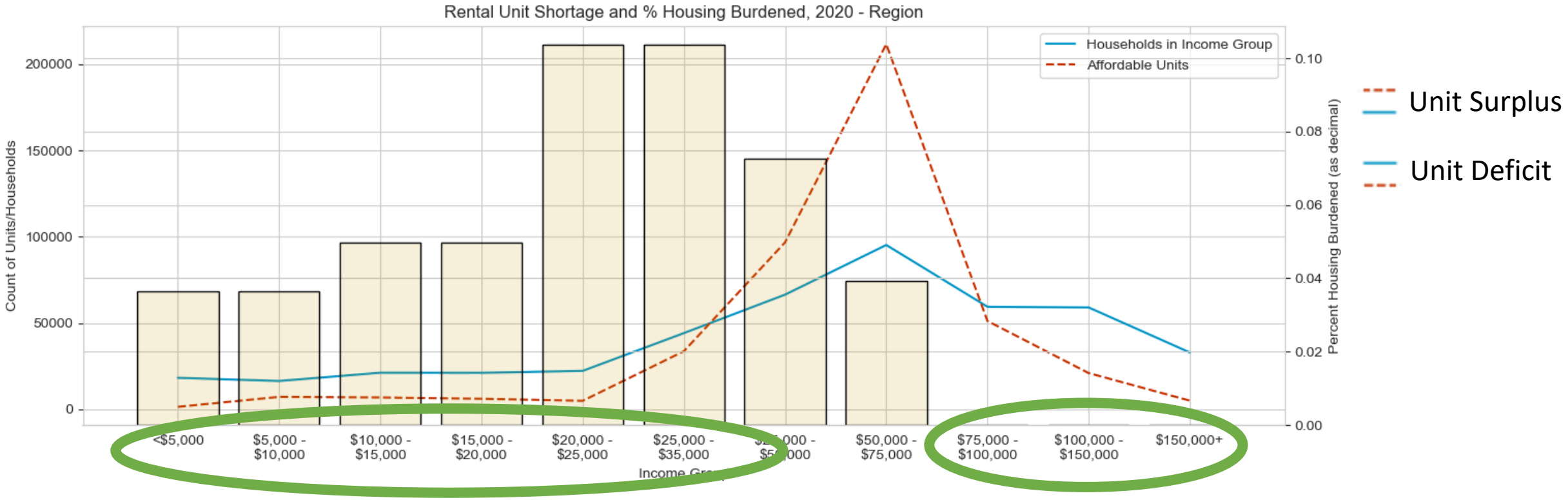


Source: Historical Census housing unit counts by tract summed to jurisdiction. Tract data from Markley, S.N., Holloway, S.R., Hafley, T.J (2022).

2010 Regional Rental Shortage by Income



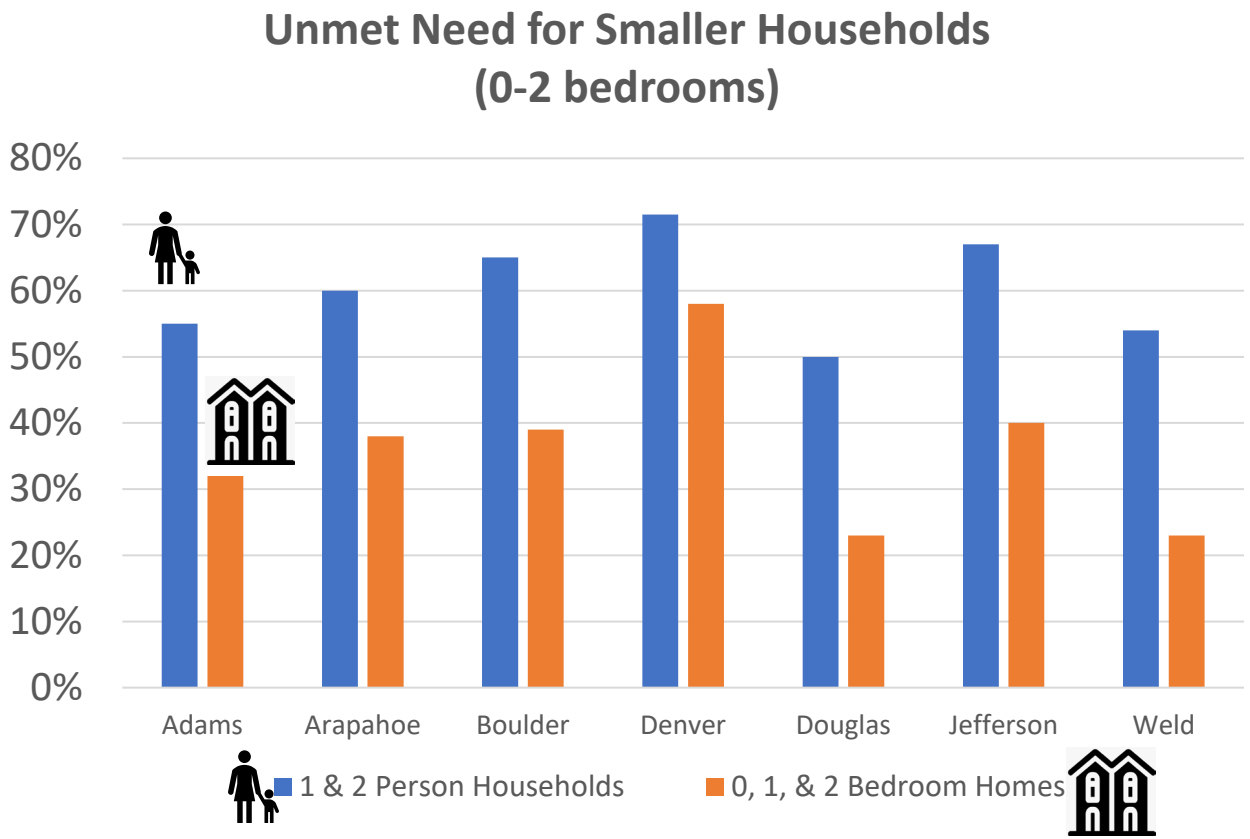
2020 Regional Rental Shortage by Income

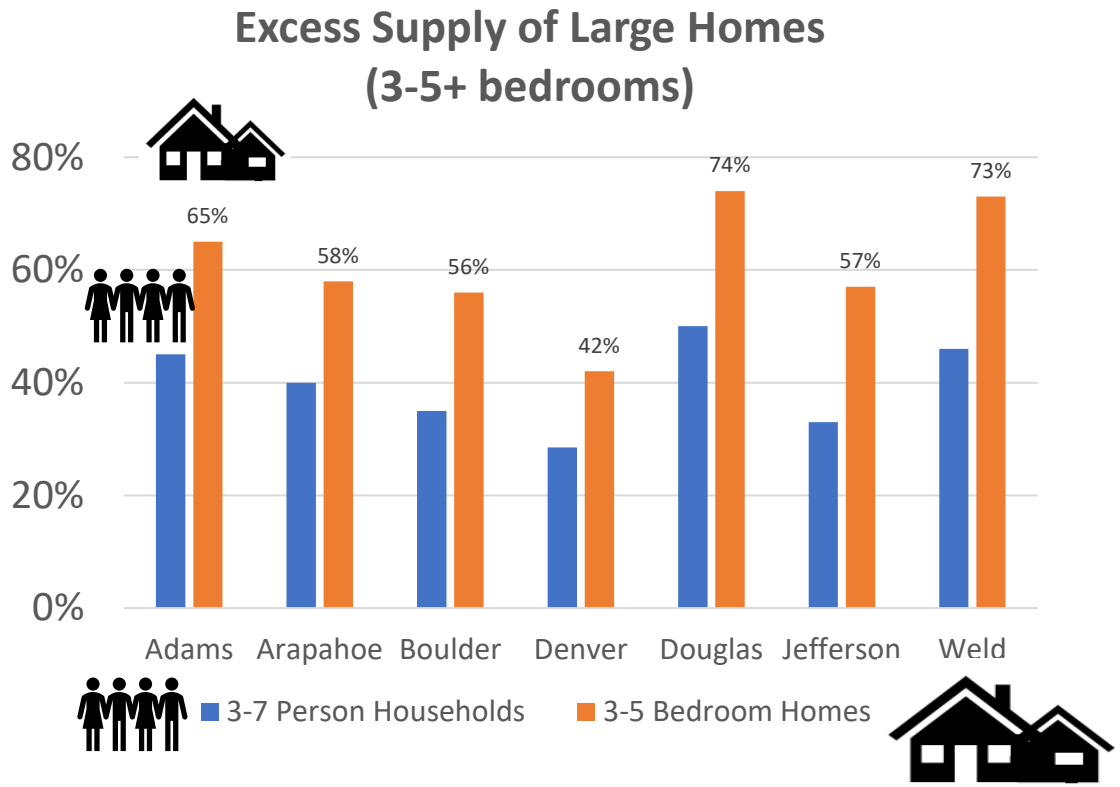


All counties follow this regional trend from 2010 to 2020

- Unit deficit at most income levels: *except* ~$50,000-$75,000
- % Housing Burdened concentrated around lower income levels: increased from 12% in 2010 to 36% in 2020
- Significant number of renters “renting down” and “renting up”

Zoning Consequences:
Housing/household mis-match





NOTE: The picture is different for large family households with low incomes

Department of Urban and Regional Planning
COLLEGE OF ARCHITECTURE AND PLANNING
UNIVERSITY OF COLORADO **DENVER**

Zoning Consequences:
Housing/household mis-match

	Bedrooms						
Persons / Household	**0**	**1**	**2**	**3**	**4+**	**3 or more**	**% of Households**
1	6%	5%	24%	29%	37%	**65%**	**18%**
2	0%	1%	10%	27%	62%	**89%**	**28%**
3	0%	0.5%	2%	19%	79%	**97%**	**17%**
4+	0.0%	0.3%	0.8%	12%	87%	**99%**	**38%**

65% of one-person and 89% of two-person households live in 3 and 4 bedroom units

Zoning Consequences:

Housing/household mis-match for older adults (70+ y.o.)

1 & 2 Person, 70+ year-old households who live in 3+ bedroom homes			
County	**1 person**	**2 persons**	**1 & 2 persons**
Denver	32%	62%	44%
Jefferson	45%	73%	59%
Metro Area	58%	76%	**64%**

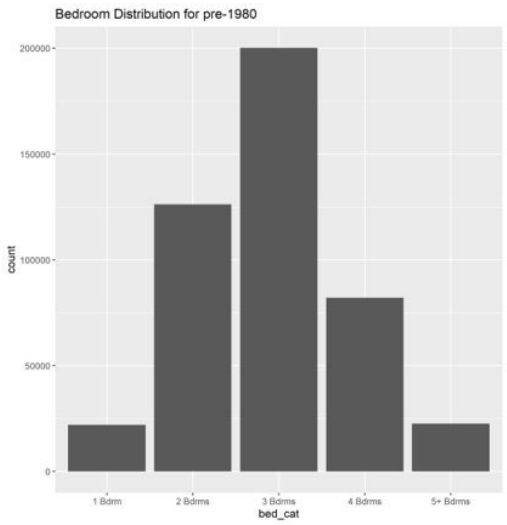
Source: U.S. Census, PUMS data, IPUMS USA, 2019-20023, ACS 5-Year sample

Are larger homes a relic?

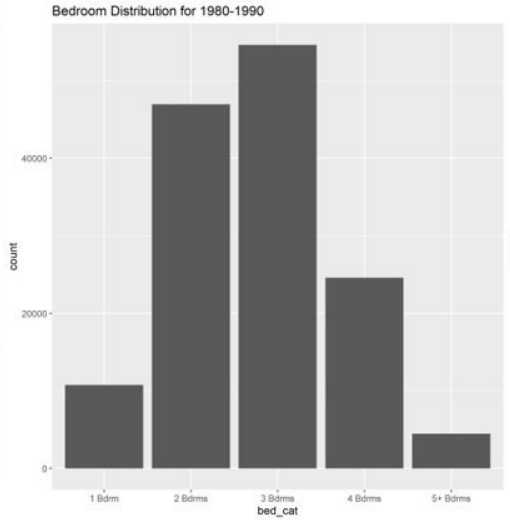
Have developers started to build smaller homes? *No*

Distribution of 1, 2, 3, 4, and 5+ bedroom homes by Year Built:

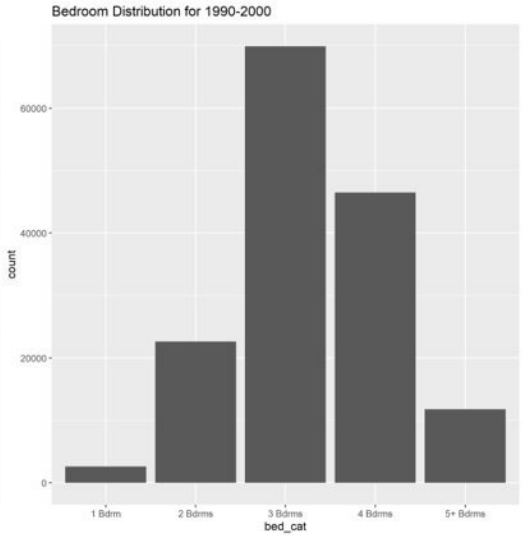
3, 4, and 5 bedroom homes continue to dominate new construction



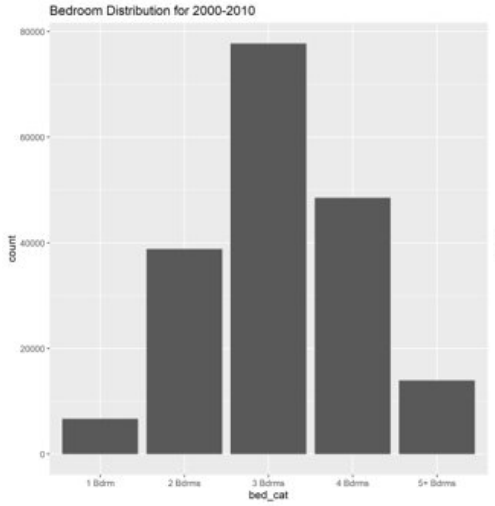
Pre 1980



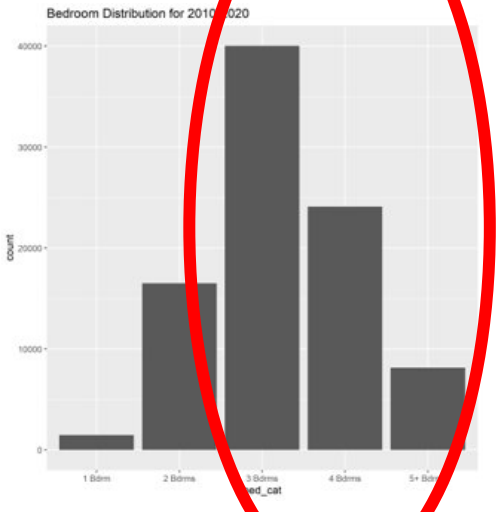
1980-1990



1990-2000



2000-2010

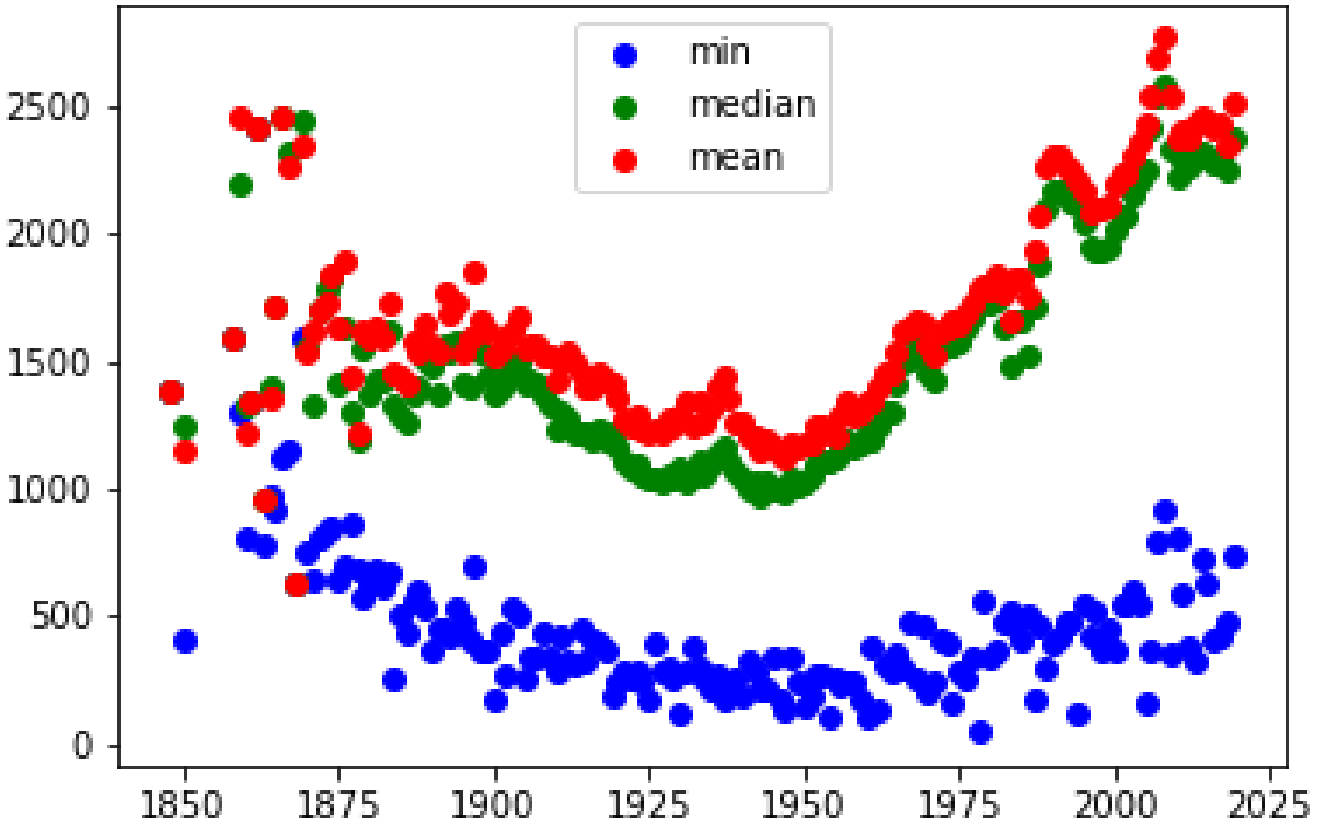


2010-2020

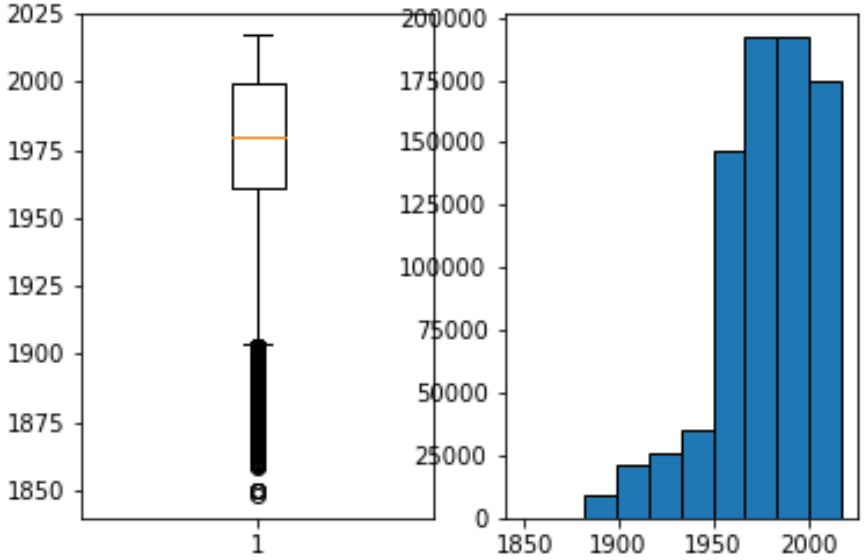
Source: Lightbox RE parcel level data, 2021, Year built field

Homes have also increased in size

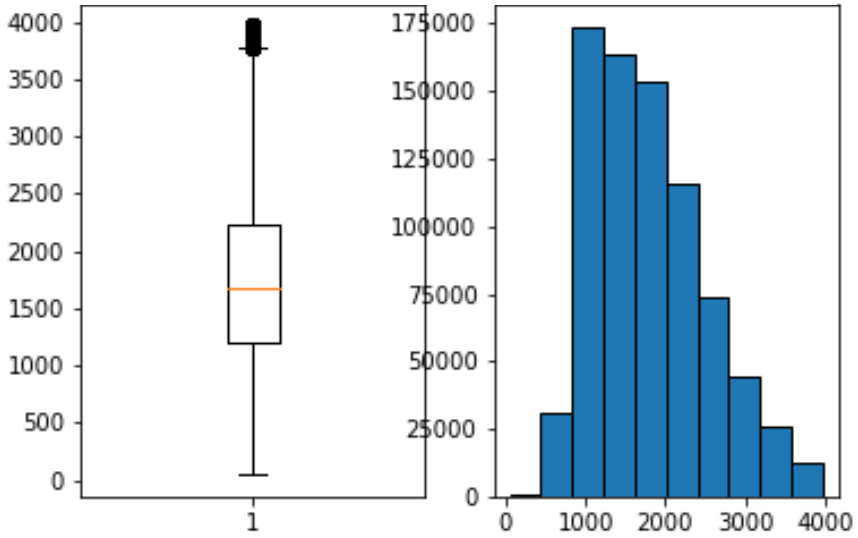
SF Homes: Year Built by Building Square Footage



Distribution of Homes by Year Built



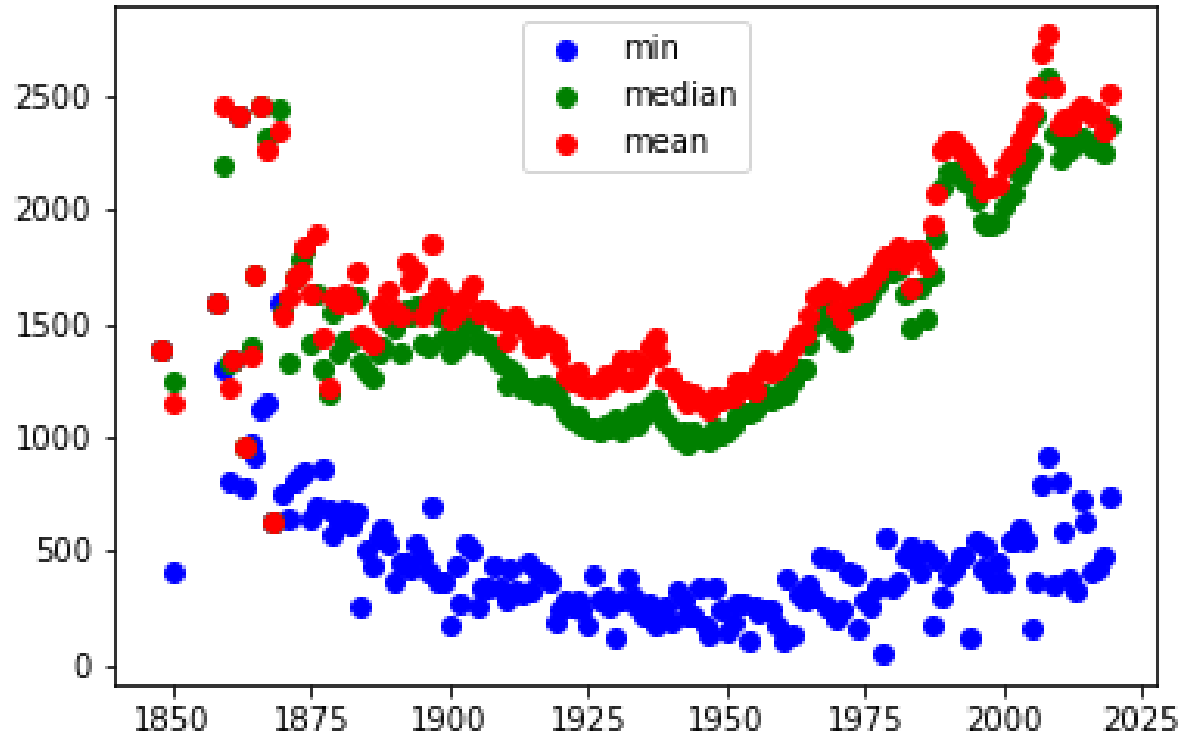
Distribution of Homes by Sq. Feet



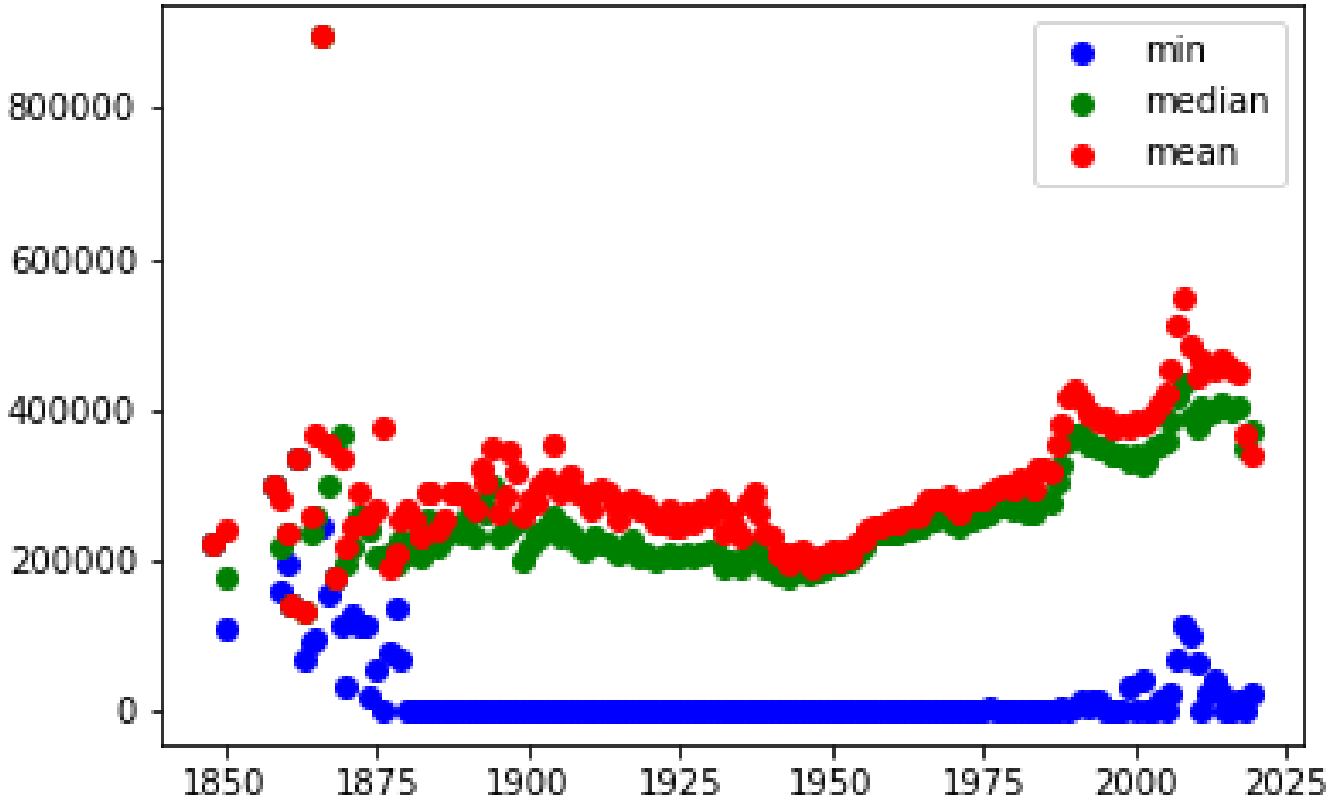
Source: Lightbox RE parcel level data, 2021, Year built field

With larger homes, come higher prices

SF Homes: Year Built by Building Square Footage



SF Homes: Year Built by Improvement Value

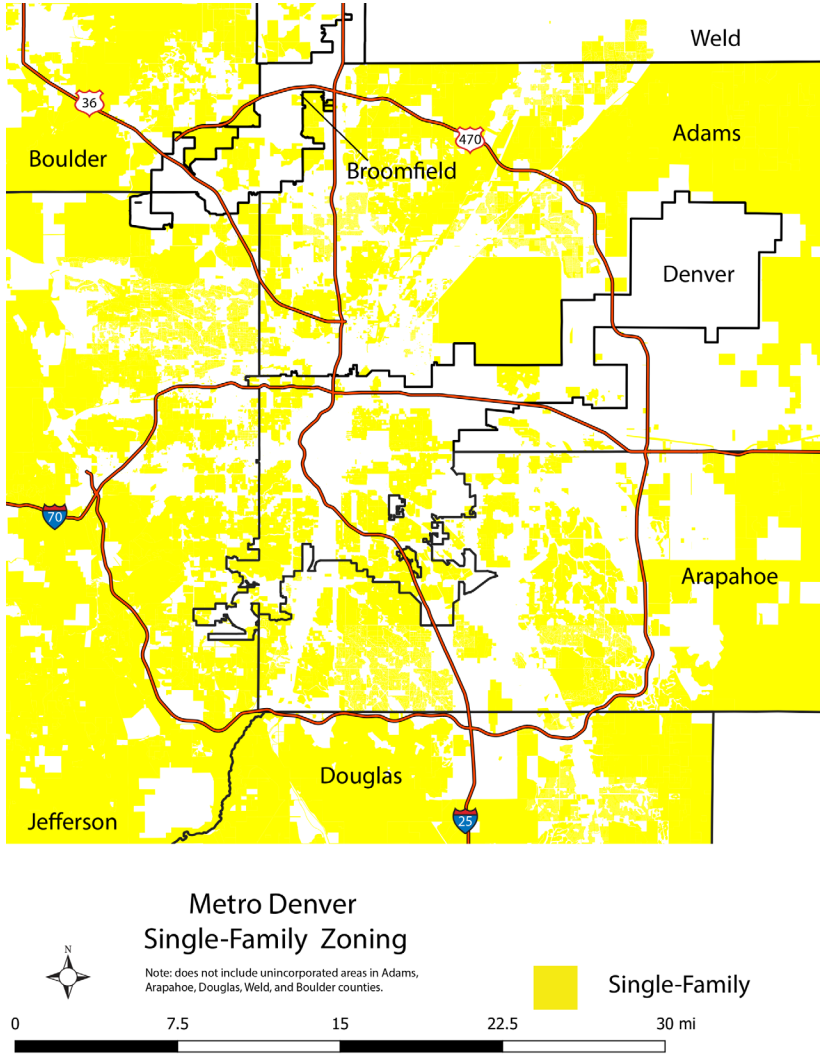


Source: Lightbox RE parcel level data, 2021, Year built and Assessed Values fields

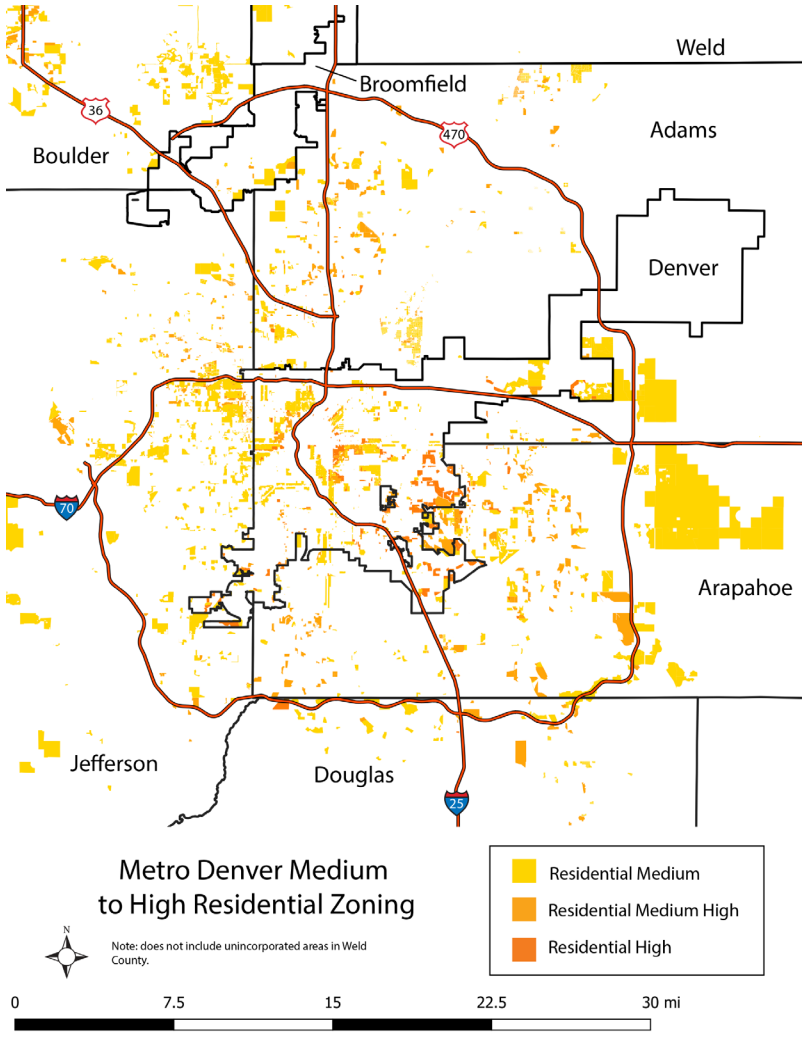
Zoning Consequences

Small households have fewer location choices

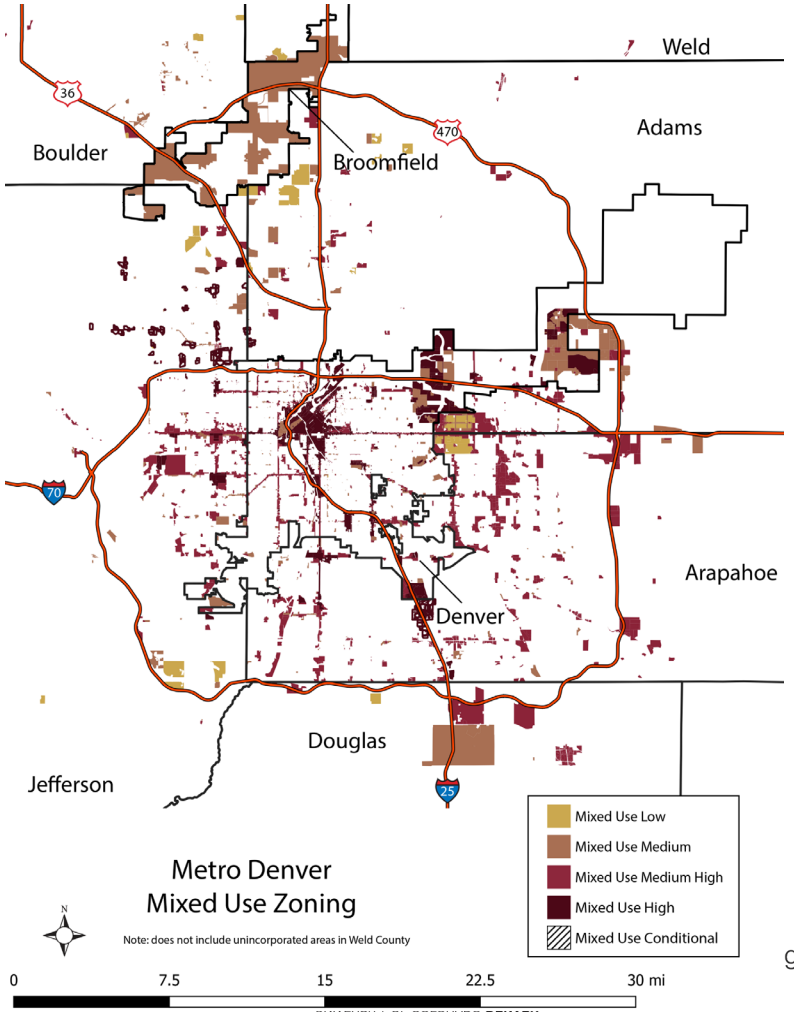
Single Family



Medium-High Density



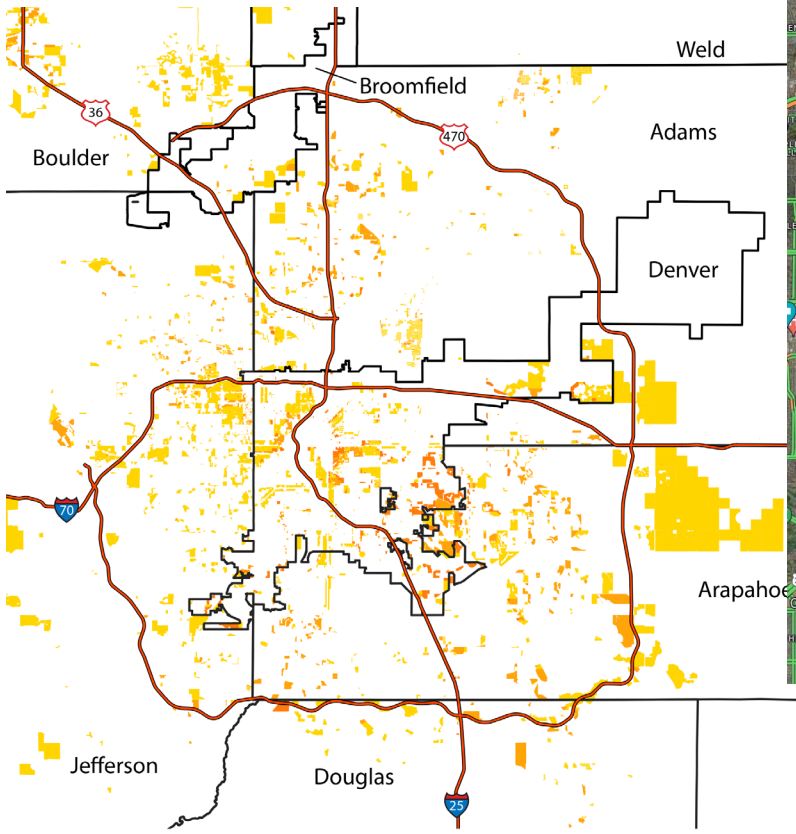
Mixed Use

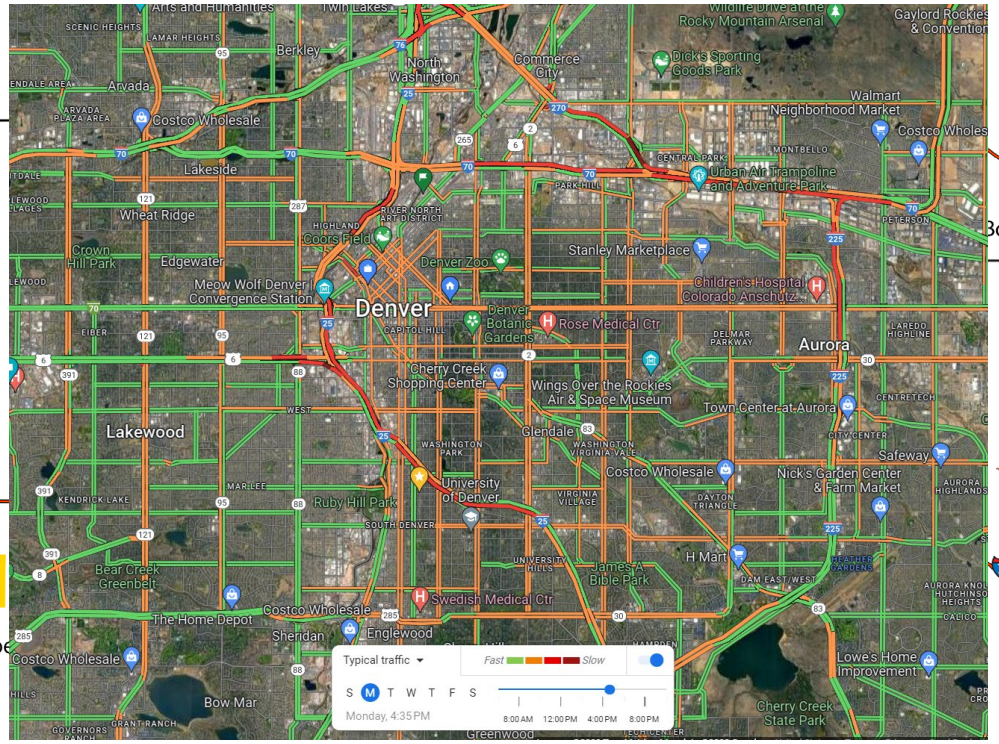


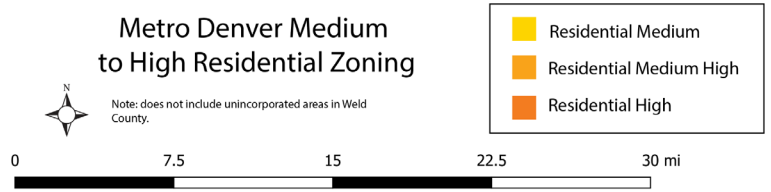
Zoning Consequences

Non-single family housing choices: limited to polluted arterials

Medium-High Density







Pollution:

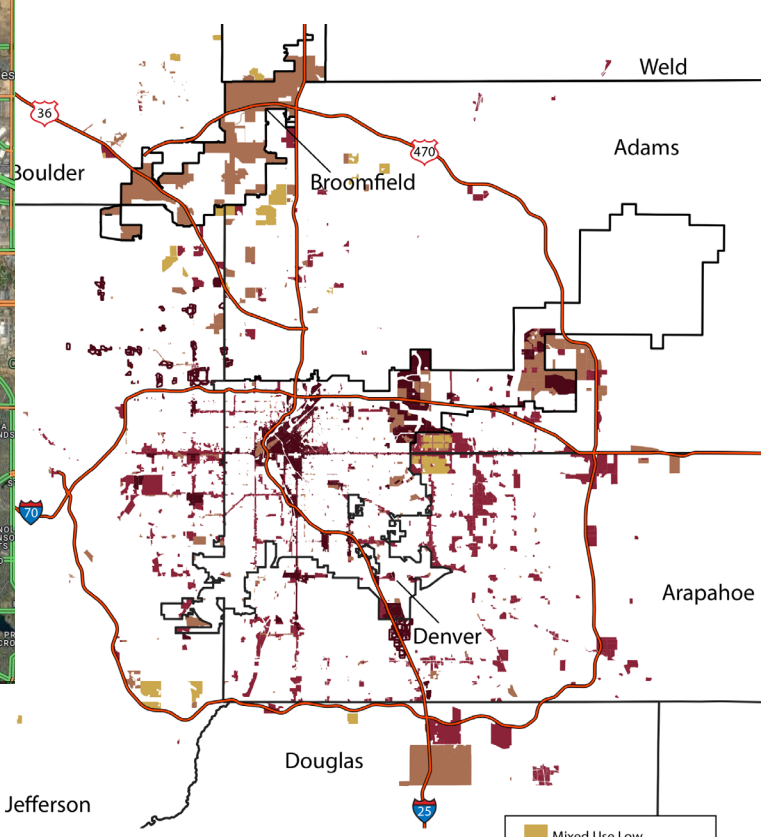
Respiratory Illness

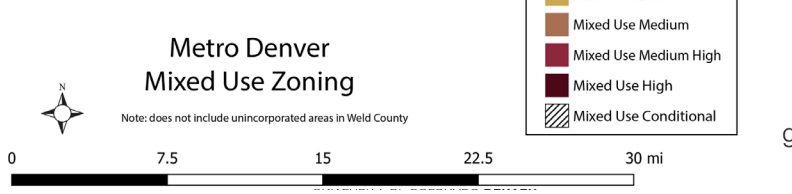
Premature births

Birth defects

Many other health issues

Mixed Use



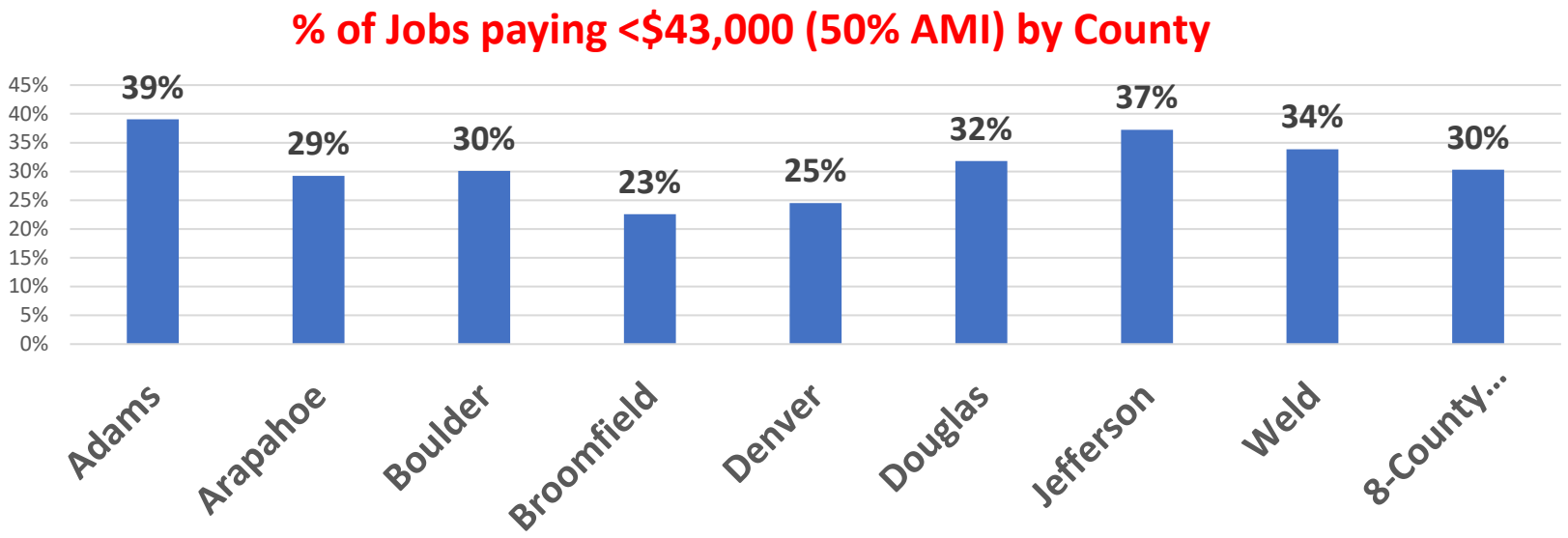


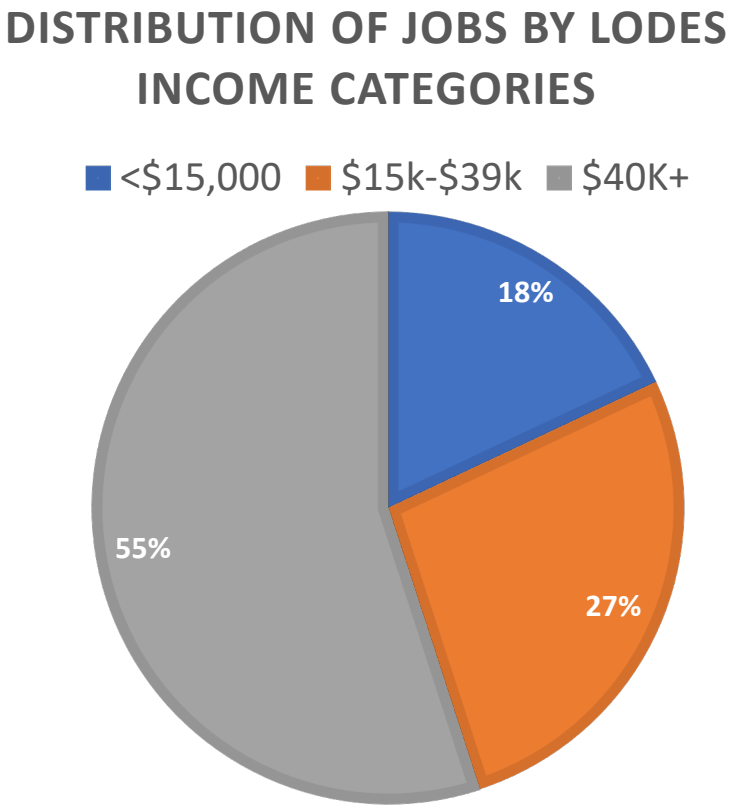
Jobs

Do jobs pay enough for housing? Can workers live near work?

Regional workers requiring affordable housing

- *30% of **private*** sector jobs (402,785) pay less than $43,000 a year (50% AMI) (Census, QCEW)
- 45% of ***all*** (private and public) jobs pay less than $40,000 a year (Census, LODES); 18% < $15,000





Economic Development without housing plans

Region's fast growing Financial Services Cluster:

Median wage for 41% of the most prevalent jobs pay **<70% AMI**

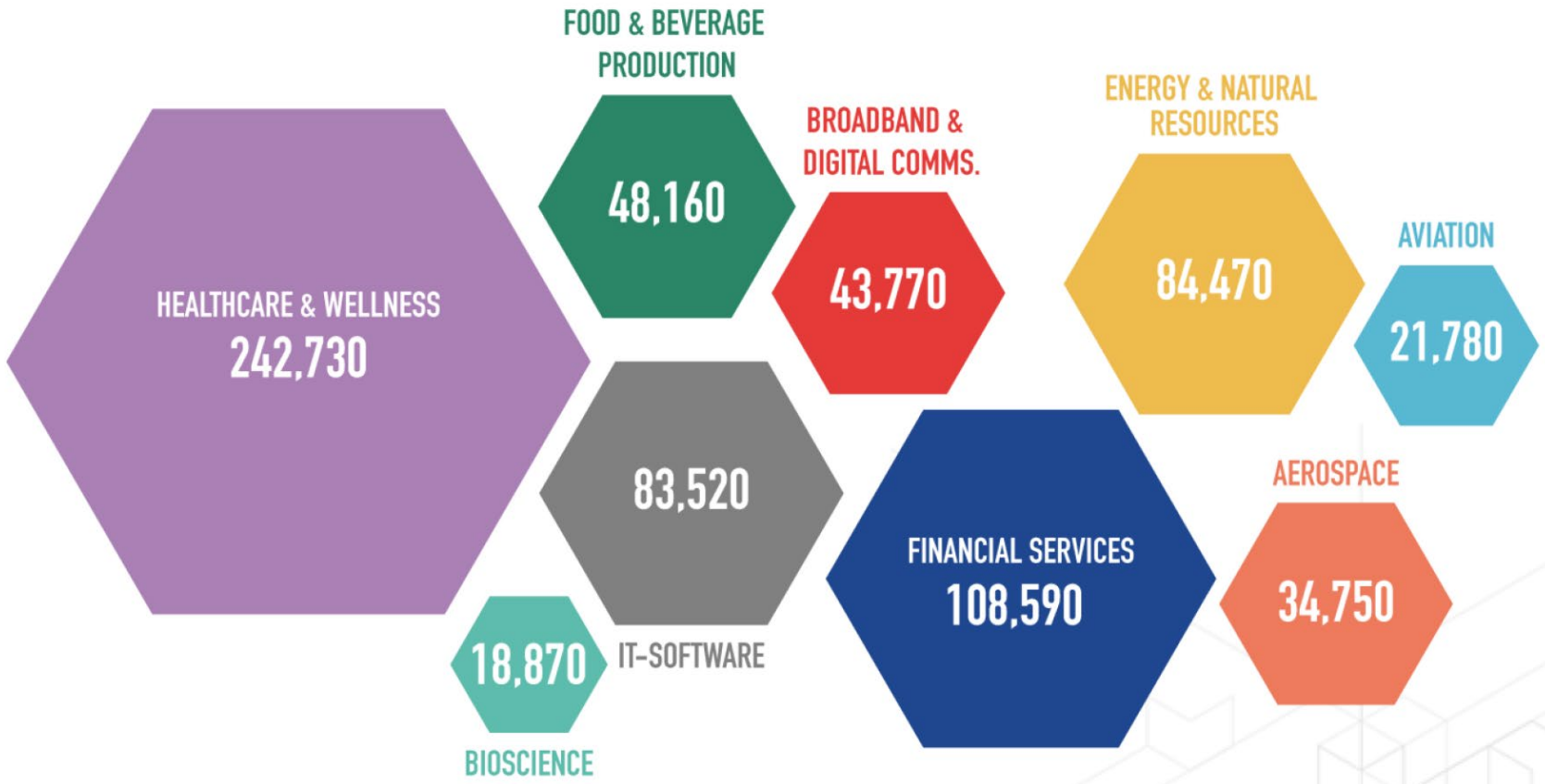
*Depending on household size, at least **68,000** financial services workers are eligible for subsidized housing.*

Metro Denver & Northern Colorado Financial Services Occupation & Salary Profile, 2020[9]

10 Largest Financial Services Occupations in Metro Denver & Northern Colorado	Total Working Across All Industries (2020)	Number of Available Applicants (2020)	Number of Graduates (2019)	Median Salary	10th Percentile Salary	25th Percentile Salary	75th Percentile Salary	90th Percentile Salary
1. Insurance sales agents	12,665	917	0	$54,730	$26,753	$36,793	$80,283	$121,697
2. Securities, commodities, & financial services sales agents	10,345	749	0	$54,089	$27,285	$37,396	$83,471	$127,247
3. Customer service representatives	36,553	2,646	0	$37,342	$25,232	$29,976	$47,988	$60,833
4. Personal financial advisors	5,103	369	472	$93,699	$43,554	$62,595	$151,159	$235,478
5. Tellers	4,512	327	0	$32,674	$25,875	$28,800	$37,883	$43,974
6. Loan officers	4,264	309	472	$60,143	$31,408	$43,152	$84,068	$110,284
7. Claims adjusters, examiners, & investigators	4,417	320	0	$71,197	$43,546	$55,650	$88,391	$109,647
8. Financial & investment analysts, financial risk specialists, & financial specialists, all other	7,429	538	486	$83,180	$50,232	$62,910	$115,906	$160,983
9. Software developers & software quality assurance analysts & testers	39,511	2,860	1,671	$108,957	$66,127	$84,400	$135,987	$163,147
10. Project management specialists & business operations specialists, all other	42,873	3,103	50	$80,642	$45,847	$58,960	$108,751	$142,539

Source: Metro Denver EDC, Financial Services Industry Cluster Study (9-county) https://www.metrodenver.org/regional-data/industry-cluster-studies

METRO DENVER INDUSTRIES EMPLOYMENT SNAPSHOT 2021



Each of these industries has similar entry-level, supportive, administrative, and other positions with low and moderate wages

Source:
Metro Denver Economic Development Corporation (Metro Denver EDC)

Planning for jobs and housing

Evaluation of municipal planning for affordable housing

- Scored city's plans & codes: Comprehensive, Housing, Zoning Code, and HOME/CDBG Performance Reports, etc.
- 16 categories and 60 "Yes/No" questions about plans and actions for AH, including zoning calculations in GIS

Affordable Housing Goals

1. Is affordable housing a **well-defined goal** with a housing shortfall analysis?
2. Are affordable housing goals **cohesive with overall plan?**
3. Do affordable housing goals **include unhoused** individuals?
4. Do affordable housing goals include people with **physical disabilities and older adults**?

Actions that Enable Affordable & Attainable Housing

5. Applied for available HUD funding?

6. HUD application include **accessibility retrofits** and AH for older adults

7. **Zoning code allows affordable and compact** development, e.g., mixed use, medium-high density

8. Multi-family units of all scales are allowed **by right**

9. Supportive and transitional housing is allowed **by right**

10. Inclusionary zoning requires a percentage of permanently affordable units in all developments

11. ADUs or backyard rental homes are allowed throughout existing low and medium density neighborhoods, and programmed as affordable units?

12. Coordinates with city or county **housing authority**

Affordable Housing Outcomes

13. Number of **subsidized units**
14. Share of households with **housing burden**
15. Share of housing units in **moderate- and high-density housing**
16. **Housing Choice Voucher** holders/units

Housing Plan Scores vs. Need for 41 Jurisdictions

Summary Plan Scoring Results				2 Measures of Need		
Average Plan Score	Number of Cities	Avg. Share of Single Family Detached	Avg. Share of Housing Cost Burdened Households	Avg. Share of Households in Poverty	Avg. Total jobs	Avg. Share of jobs paying <$39K
41-50	5	47%	14%	12.7%	170,374	46%
31-38	11	60%	11%	8.7%	25,362	53%
20-29	12	75%	11%	6.5%	7,763	55%
0-19	13	71%	9%	5.3%	15,901	50%

- These 5 communities cannot provide all the housing for the 400,000+ workers who need affordable housing

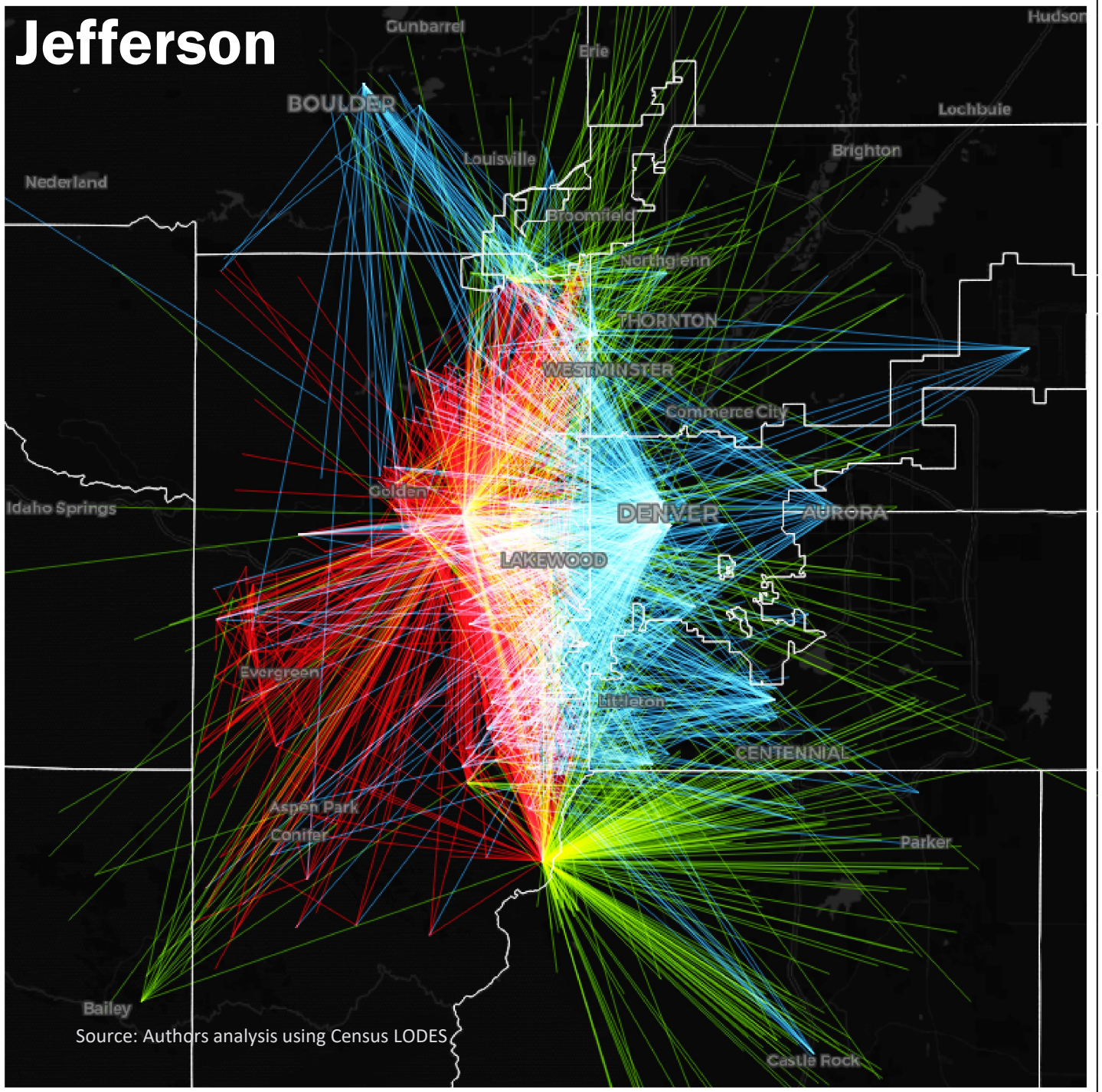
Origin-Destination Pairs for Commutes Originating and/or Terminating in Jefferson County

Works and Lives in Jefferson County

Lives in Jefferson County but works outside of it

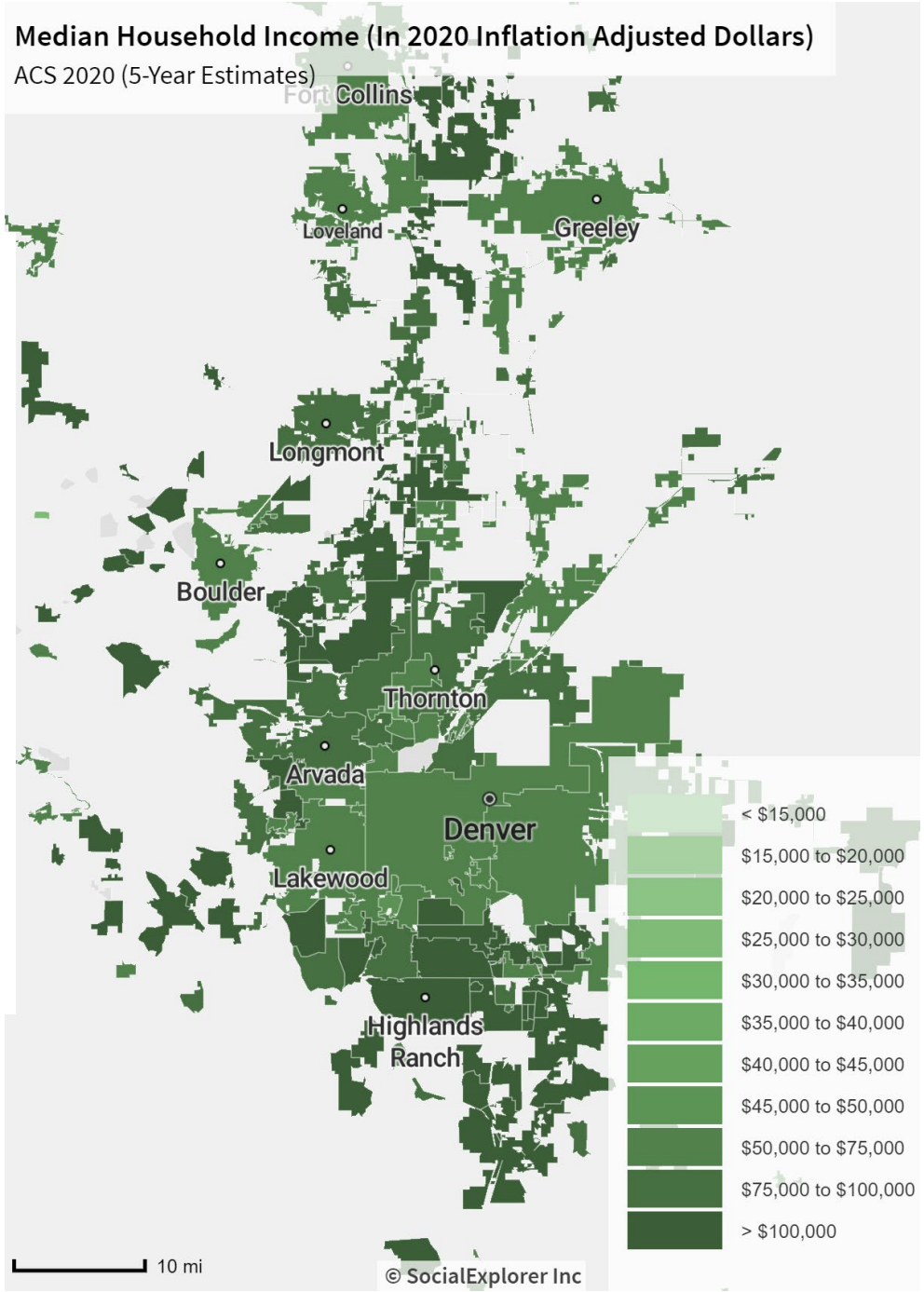
Works in Jefferson County but lives outside of it

** Each line represents at least two workers traveling from the same origin block to the same destination block.*

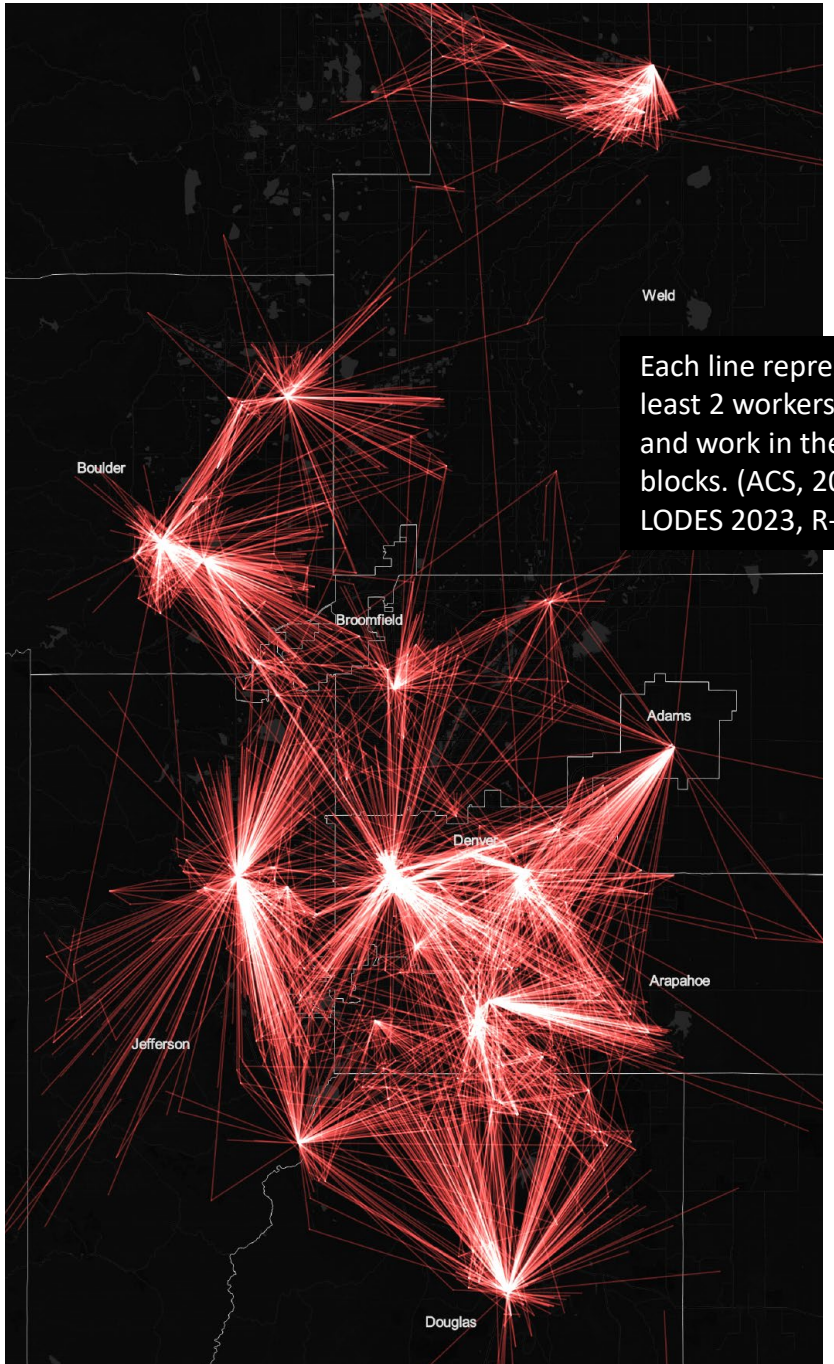


Source: Authors analysis using Census LODES

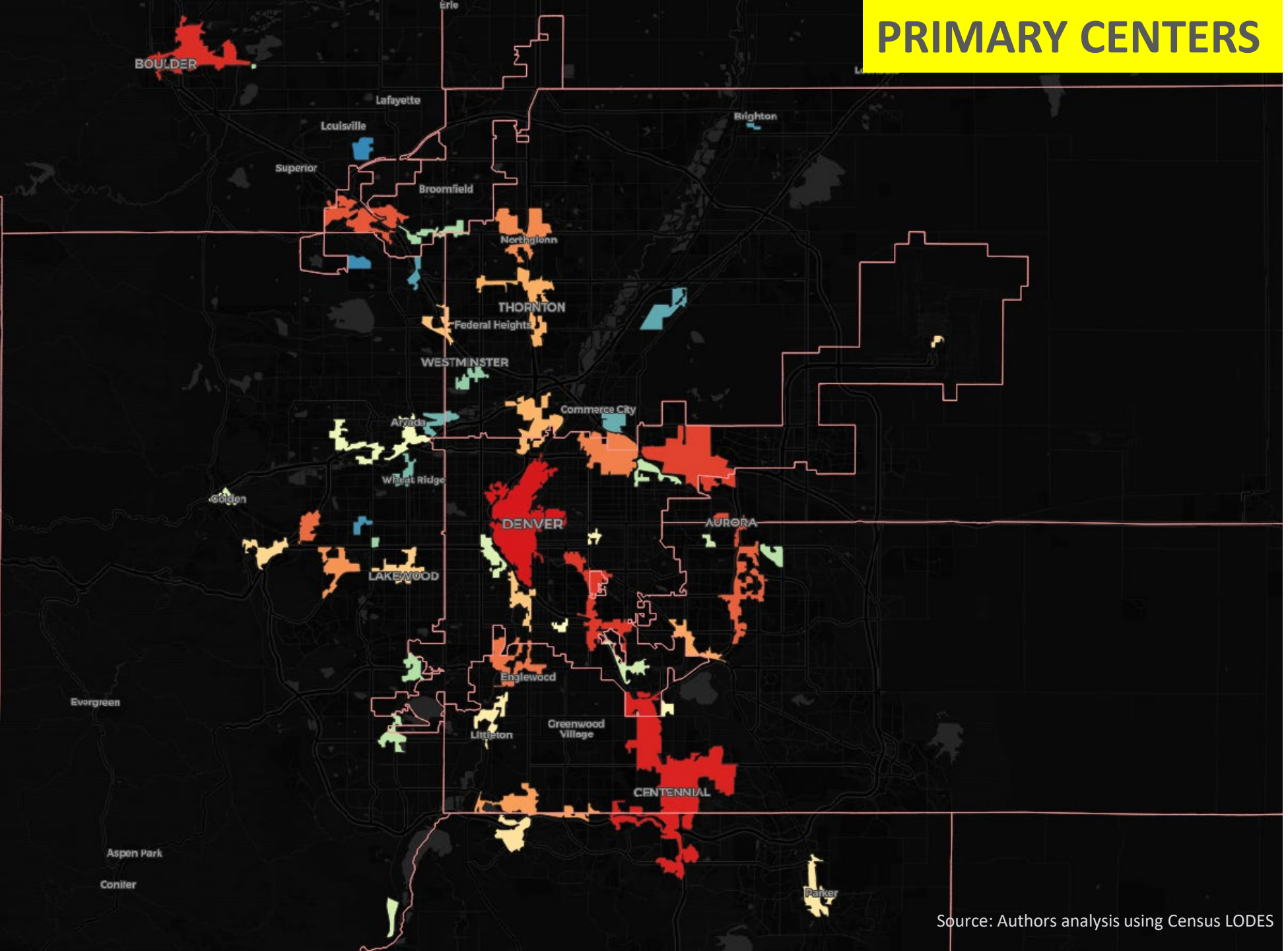
Income polarization and low density employer center distribution mirror the work commutes in the region, long distances between homes and jobs, crossing county boundaries.



Commuter Home/Work Locations

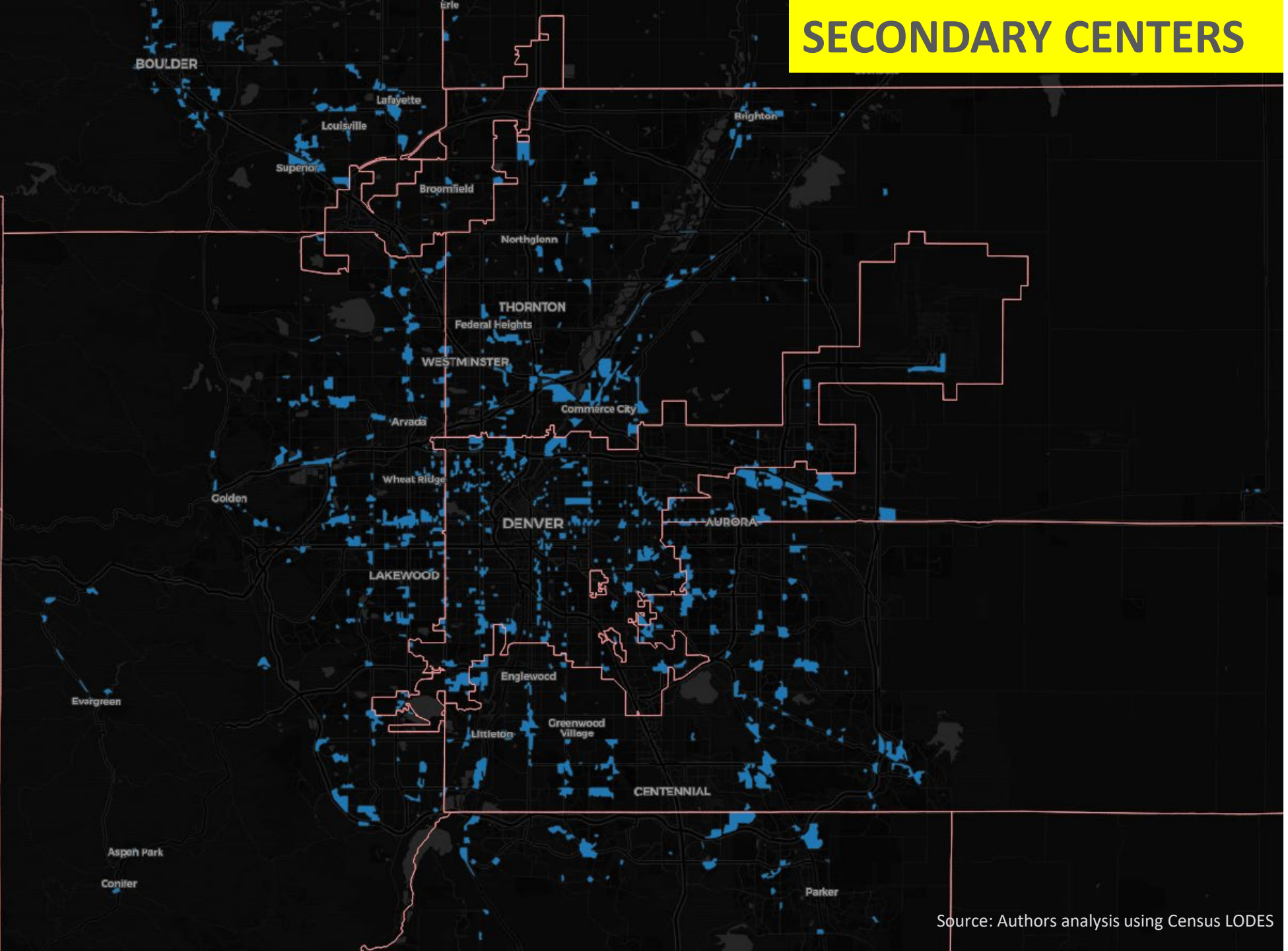


Each line represents at least 2 workers who live and work in the same blocks. (ACS, 2018-2023, LODES 2023, R-package)



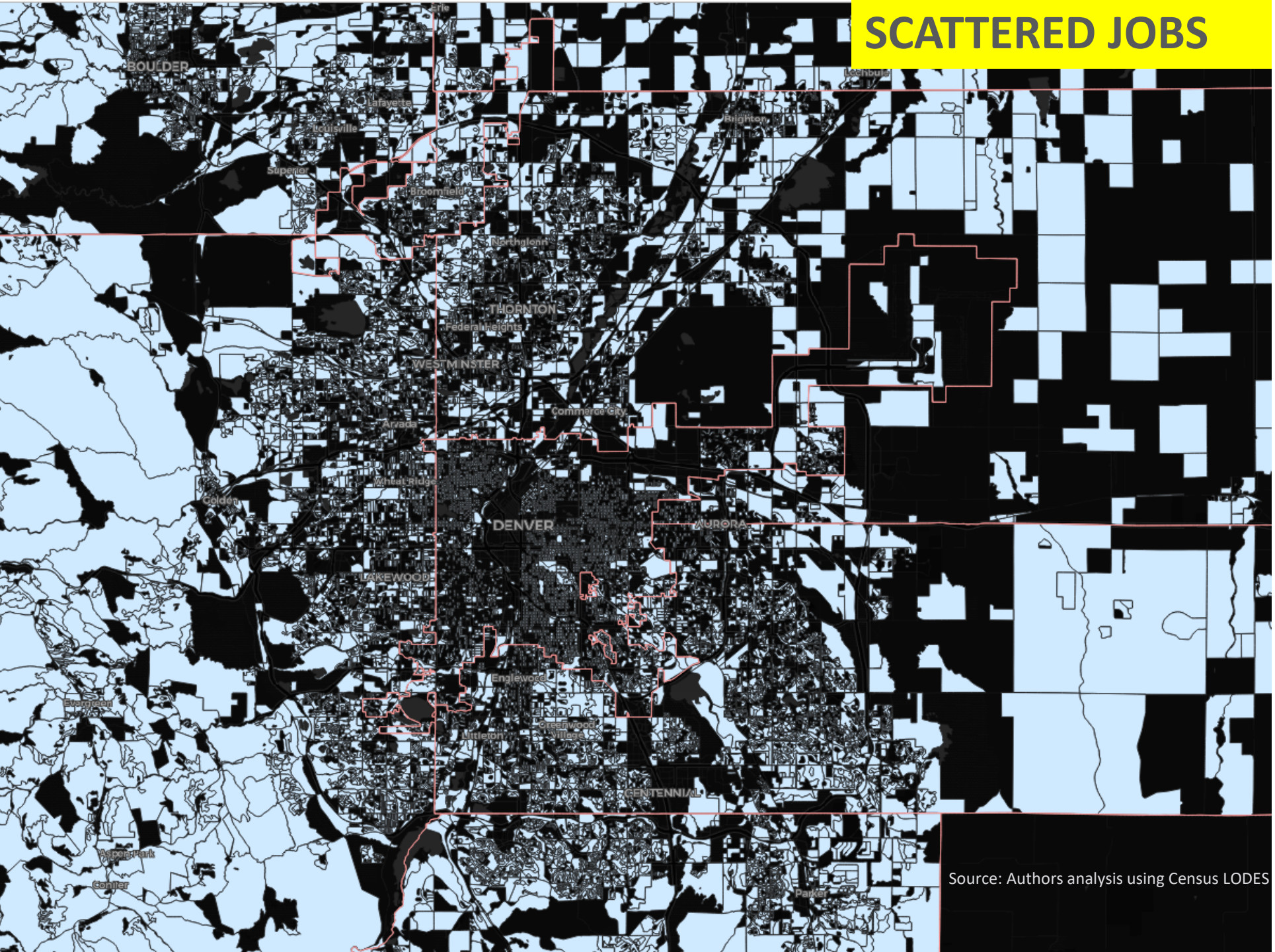
60% of Jobs in 58 “primary centers”

SECONDARY CENTERS



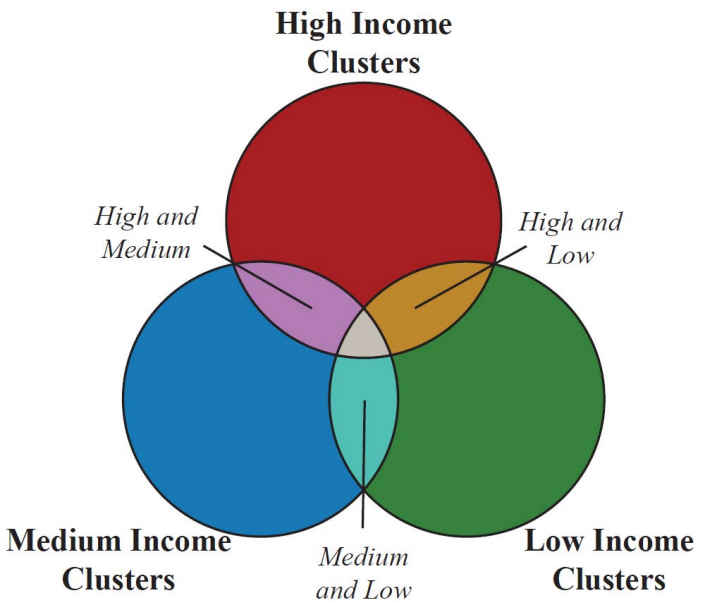
20% of Jobs in “secondary centers”

Source: Authors analysis using Census LODES

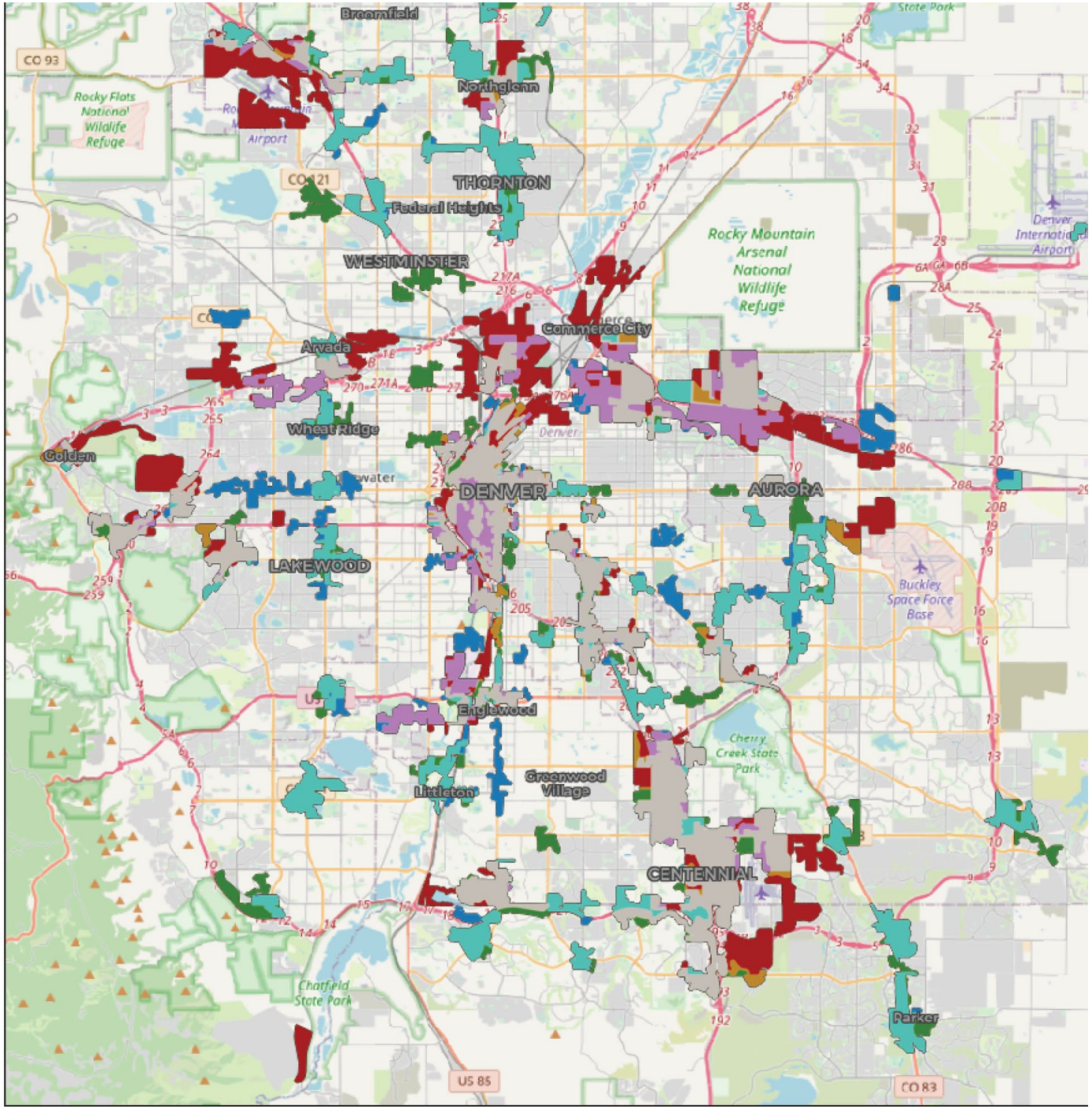


20% of Jobs are outside of centers, e.g., “uncentered”

Differential Distributions of Primary Employment Clusters for High, Medium, and Low Income Groups



Source: Authors analysis using Census LODES

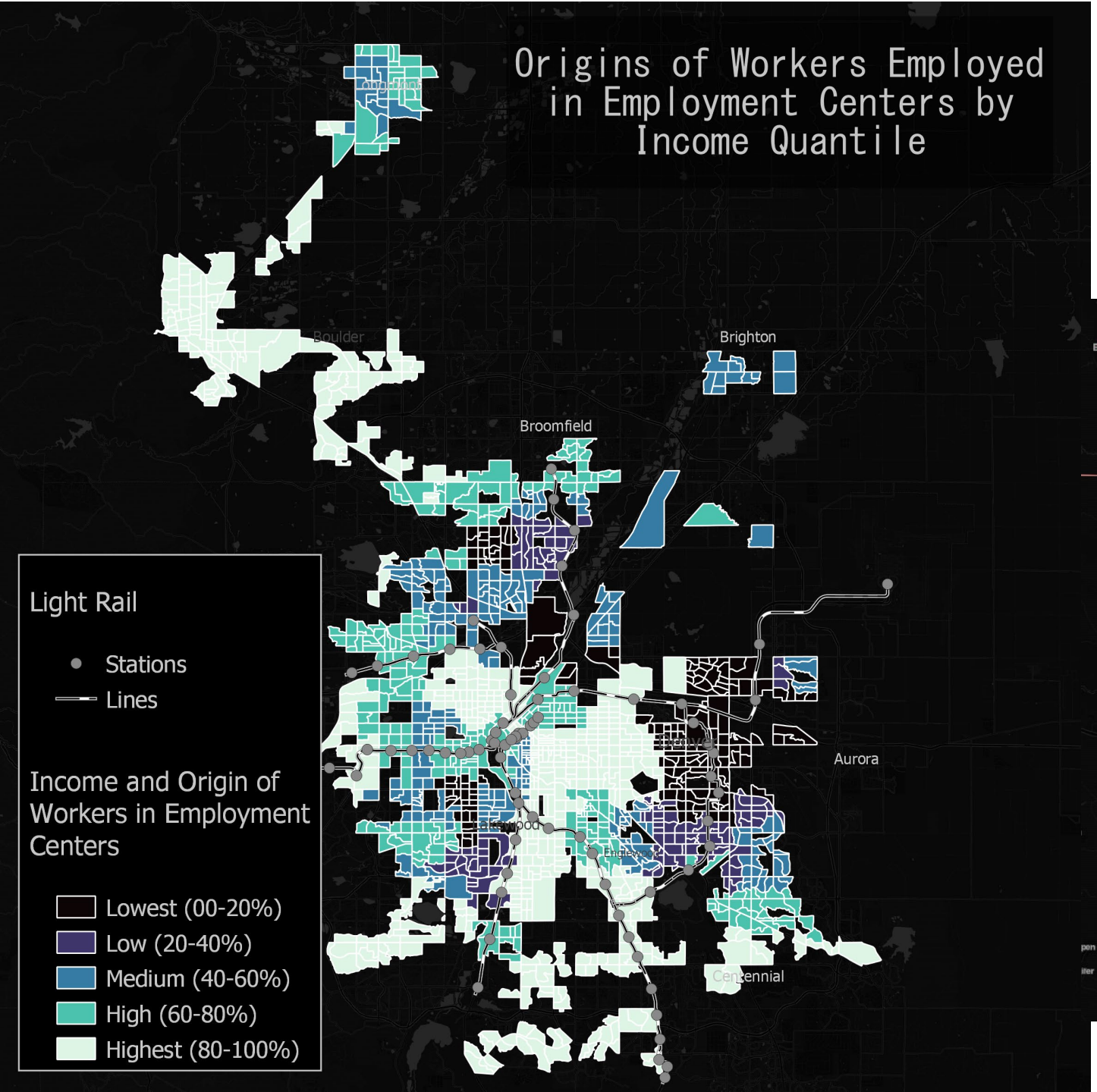


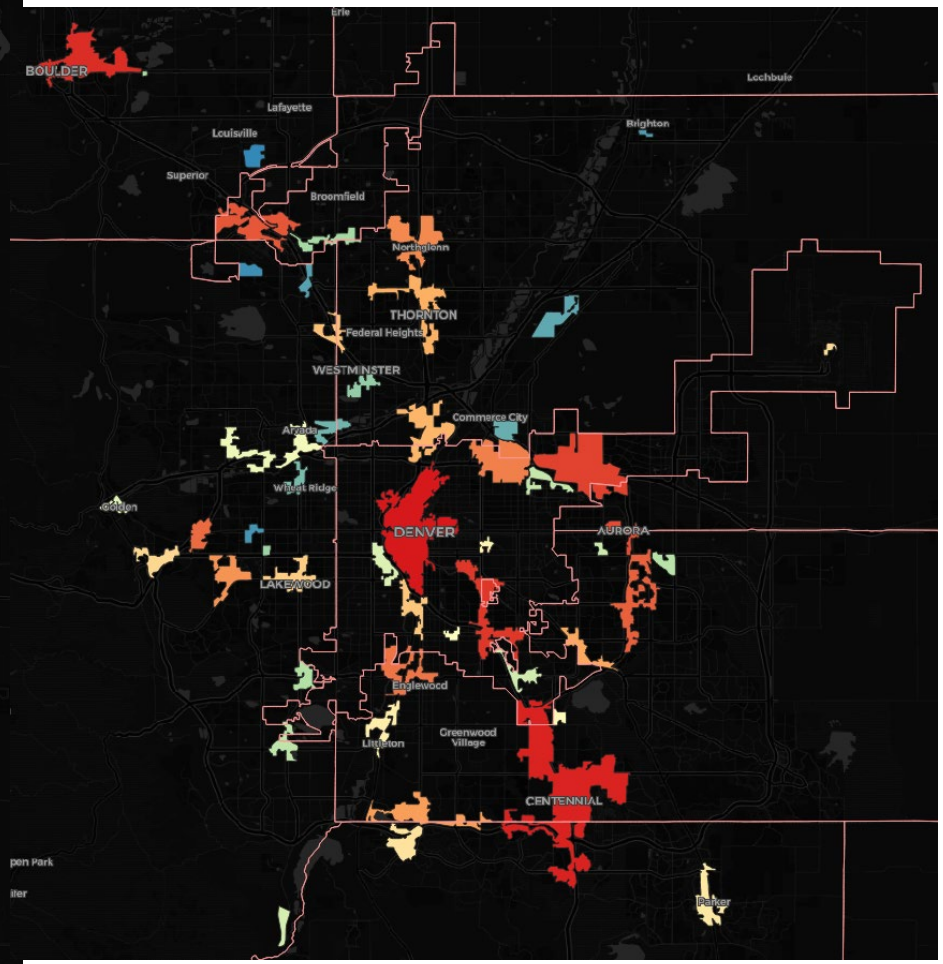
Significant* differences in shares of workers by income across the 3 types of centers

Lower wage jobs are more prevalent in secondary and uncentered locations– not as transit friendly

Where do EC workers live by income?

Areas with higher income workers align with light rail or frequent/express bus routes to downtown core and other employment clusters



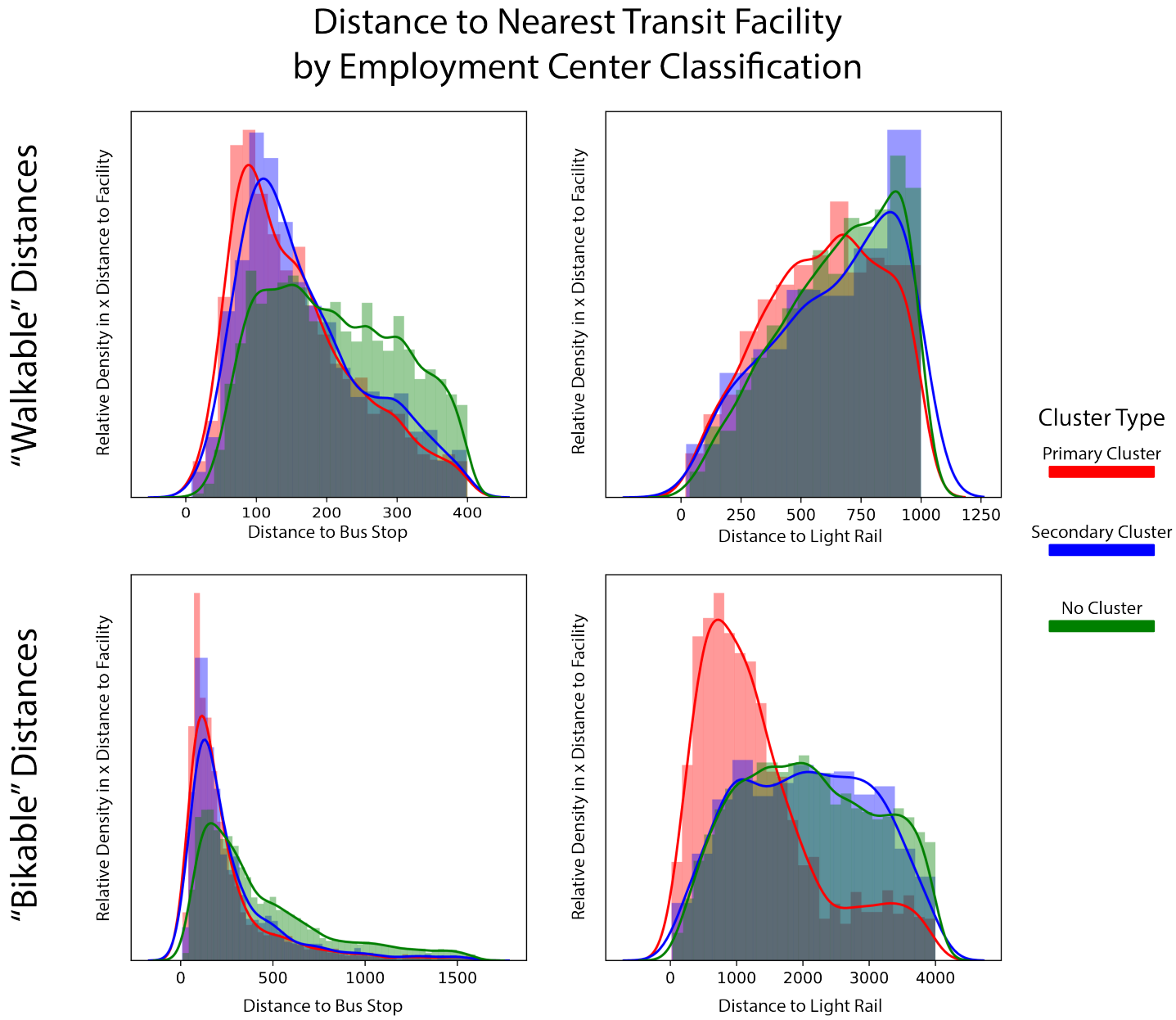


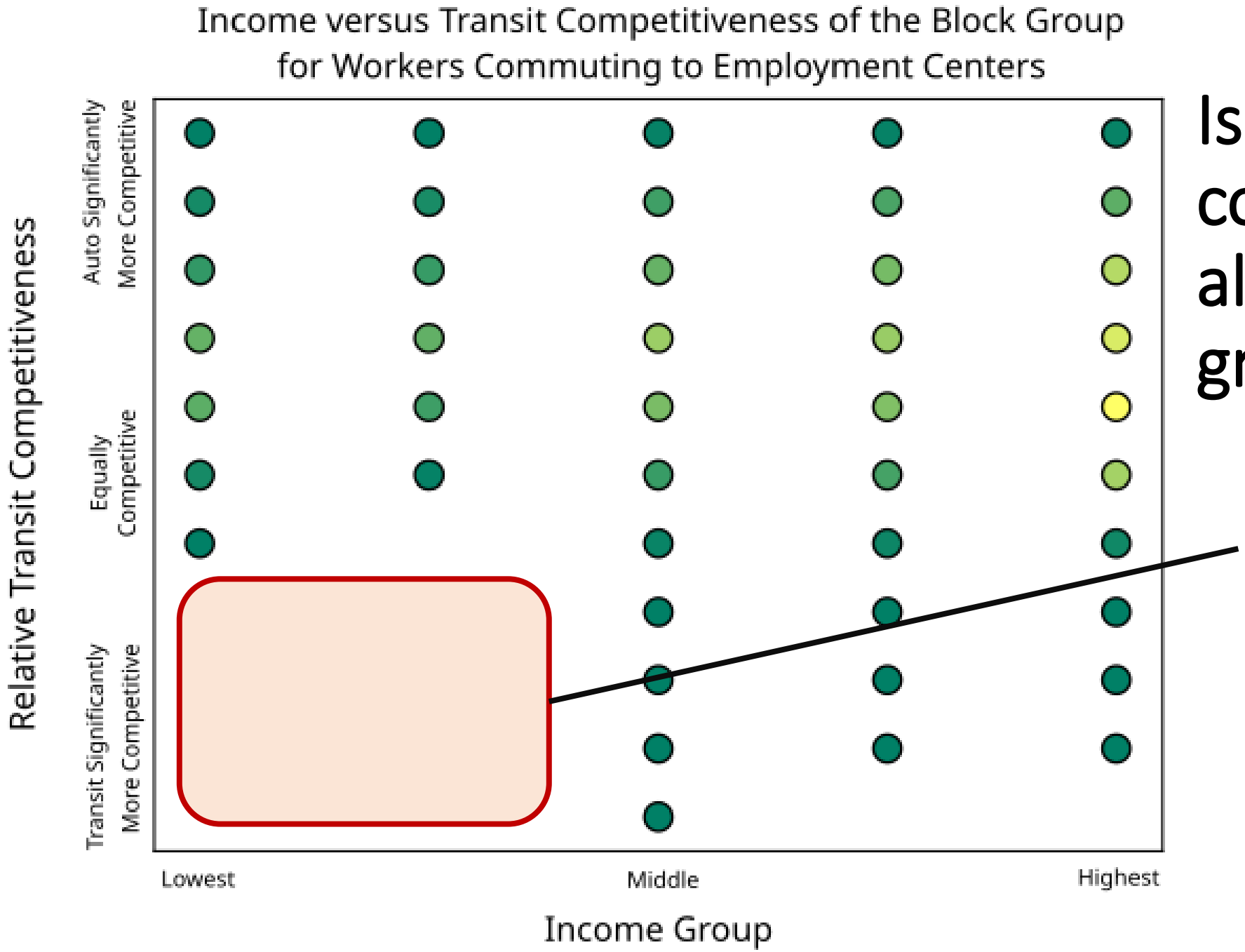
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Bus and rail near centers

Primary job centers are closest to light rail

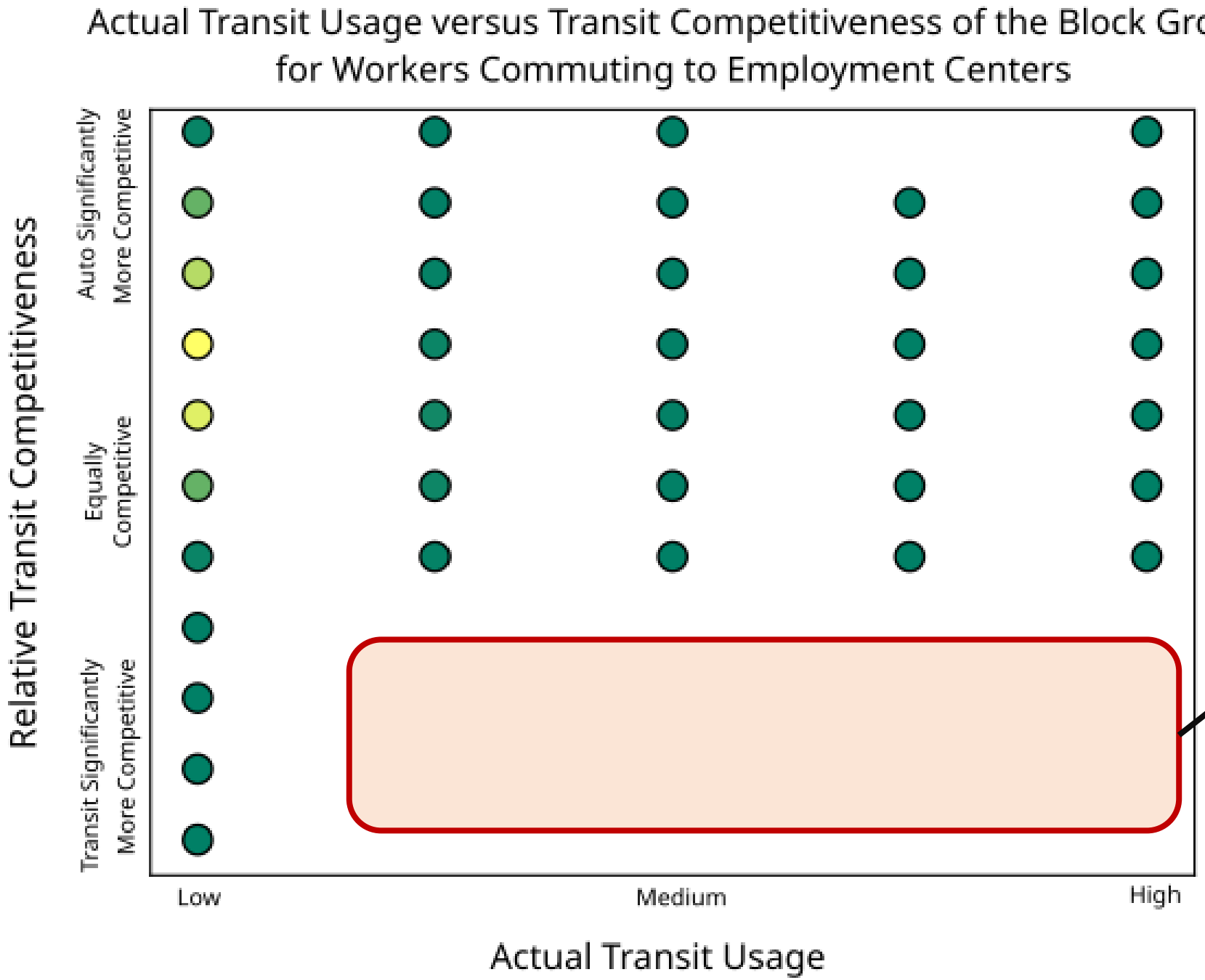
Workers in non-centered jobs (mostly lower wage) have lower access to transit





Is transit competitive for all 5 income groups?

Significant mismatch: **no** block groups with a low-income average, have transit options that offer competitive commute times

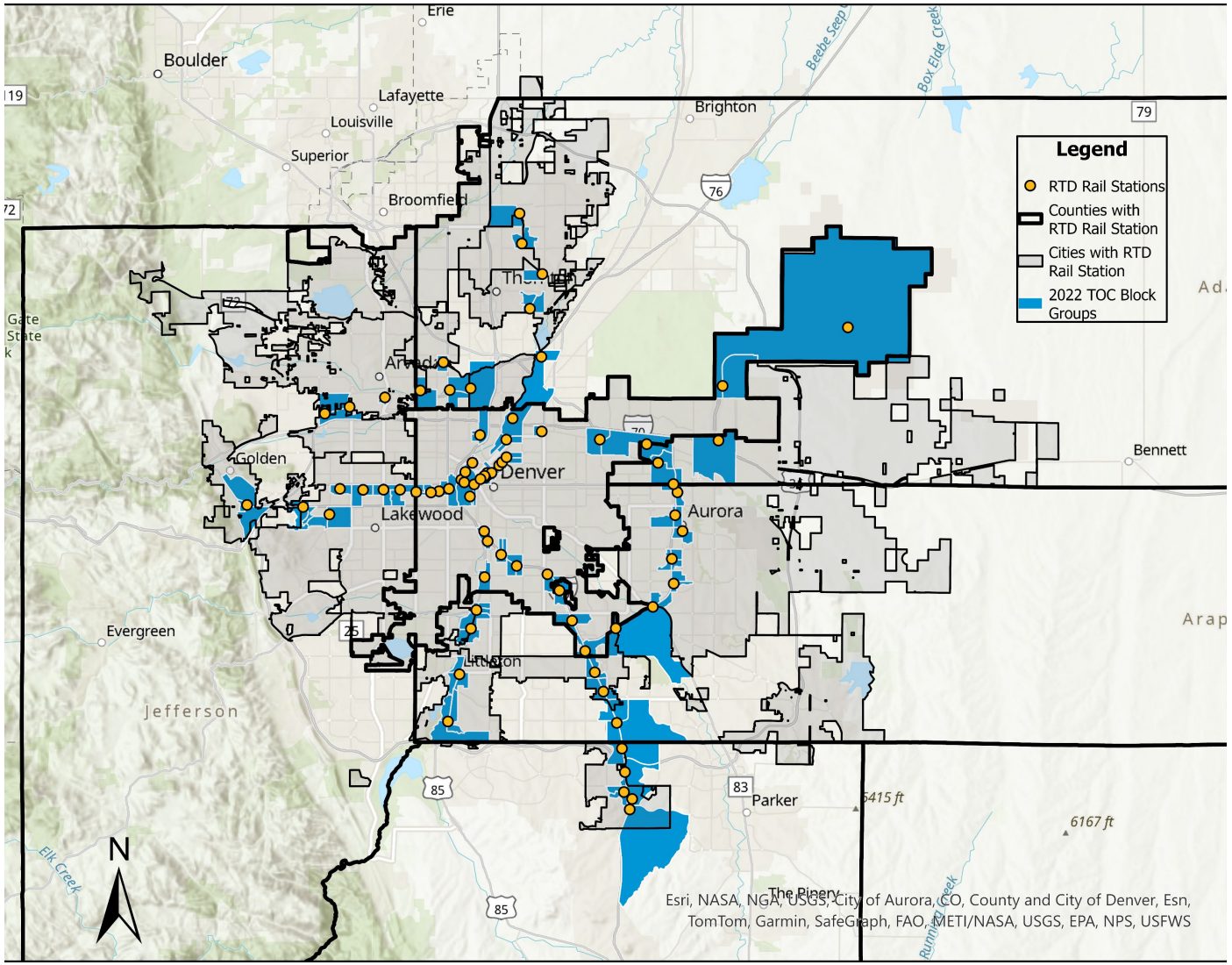


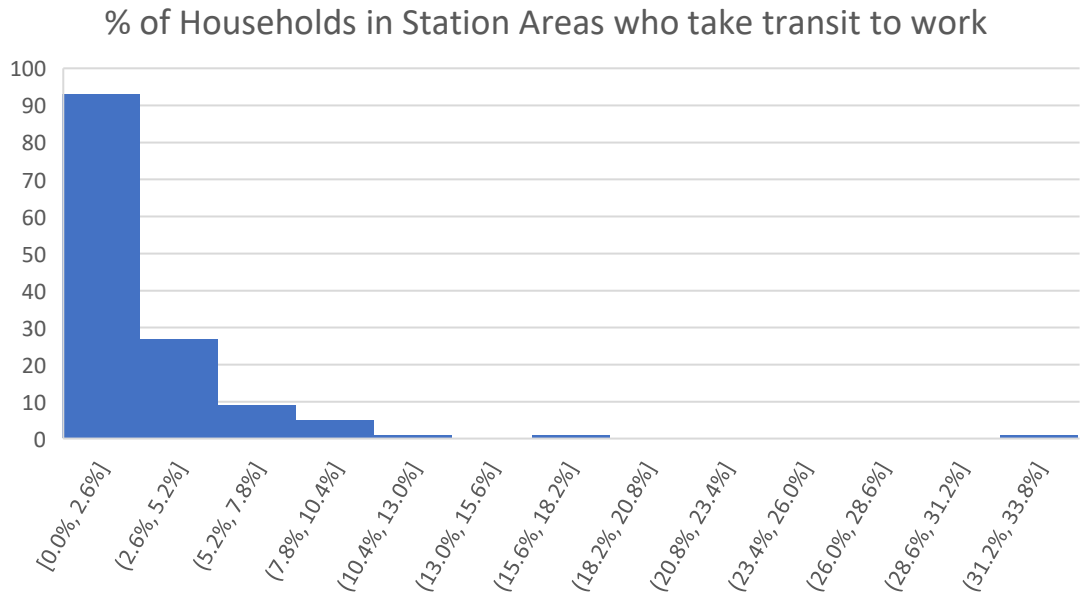
Do workers take advantage of time-competitive transit?

areas with high transit competitiveness (higher income groups) lack higher actual transit usage

***note – since the travel times analysis does not considerer traffic, this may lose areas where light rail becomes more competitive than driving during rush hour*

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Legend
RTD Rail Stations
Counties with RTD Rail Station
Cities with RTD Rail Station
2022 TOC Block Groups
Boulder
Lafayette
Louisville
Superior
Broomfield
Brighton
Erie
Arvada
Golden
Denver
Lakewood
Aurora
Bennett
Evergreen
Littleton
Parker
Jefferson
The Pinery
6415 ft
6167 ft
N
Esri, NASA, NGA, USGS, City of Aurora, CO, County and City of Denver, Esn, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, USFWS


% of Households in Station Areas who take transit to work
100
90
80
70
60
50
40
30
20
10
0
[0.0%, 2.6%]
(2.6%, 5.2%]
(5.2%, 7.8%]
(7.8%, 10.4%]
(10.4%, 13.0%]
(13.0%, 15.6%]
(15.6%, 18.2%]
(18.2%, 20.8%]
(20.8%, 23.4%]
(23.4%, 26.0%]
(26.0%, 28.6%]
(28.6%, 31.2%]
(31.2%, 33.8%]

Mismatch Consequences

Time poverty, self-care, preservation, and mobility

Housing affects… health (mental and physical), education, and community connections because it affects:

- **Household Budgets:** High shares of low wages go to housing and transportation, leaving little residual income for healthcare, nutrition, education, energy, self-care, leisure, and more
- **Time Poverty:** the opportunity costs caused by extraordinary amounts of time on daily routines, e.g., travel, which directly affects household well-being.
- **Result:** intergenerational social ***im***mobility

Solutions?!

The role of planning and advocacy

The Role for Planners:
Orchestrators of urban development

Planners' Roles

Within a community's goals:

- Anticipate, assess, gather data and input
- Support growth while protecting valued aspects
- Coordinate long term investments and actions
- Coordinate land use, transportation, utilities and other governmental functions
- Balance public and private sector activities
- Resolve intra- and inter-community conflicts
- Ensure vertical consistency: region, state, federal
- Fairly distribute benefits and burdens while protecting the most vulnerable, includes pursuit of funding

Developers' Roles

Within a community's goals AND the market:

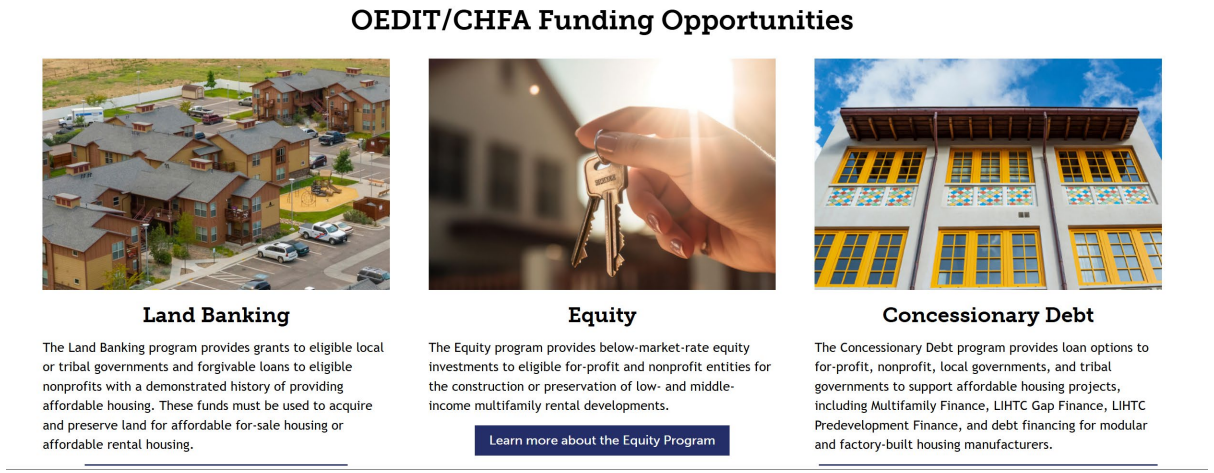
- Anticipate and respond to demand
- Support growth
- Invest in communities
- Assemble financing, land, users, designers, builders, realtors, and others to create needed spaces
- Balance public goals and private sector demands
- Earn a profit
- Create lasting value

Public's Role: Actively participate in the planning process, public hearings, and elections

Colorado’s response to the crisis







- November **2022:** Colorado voters passed Proposition 123 authorizing the state to retain money from existing state tax revenue to support affordable housing investment.
- To be eligible for grants, cities must create a baseline of affordable housing and use strategies to increase it by 3%/year and 9% by 2026.
- $300M/ year is 30x more than the state had, but still not enough.

40%: Affordable Housing Support Fund **~$115M**

60%: Housing Financing Fund **~$175M**

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2023 Omnibus Housing & Land Use Reform Bill: FAILED

2024 Passed Housing & Land Use Laws



Prohibit Residential Occupancy Limits (HB 24-1007)



Minimum Parking Requirements (HB 24-1304)



Accessory Dwelling Units (HB 24-1152)



Transit-Oriented Communities (HB 24-1313)



Housing Plans (SB 24-174)



State of Travel Sustainability in U.S. Metropolitan Areas

Urban, Midurban and Suburban Block Groups by 14 U.S. Metro Areas

Fewer places have lower transport use and costs and, therefore, lower energy use and emissions.

But we can create and retrofit more urban places.

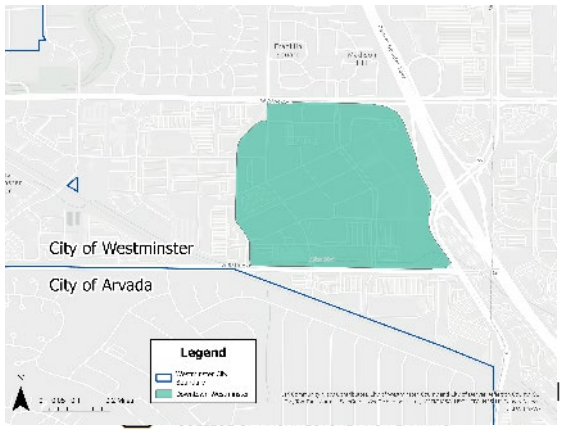


Midurban “Retrofit” Case Study: Westminster, CO’s new Downtown



Former mall “gray-field”

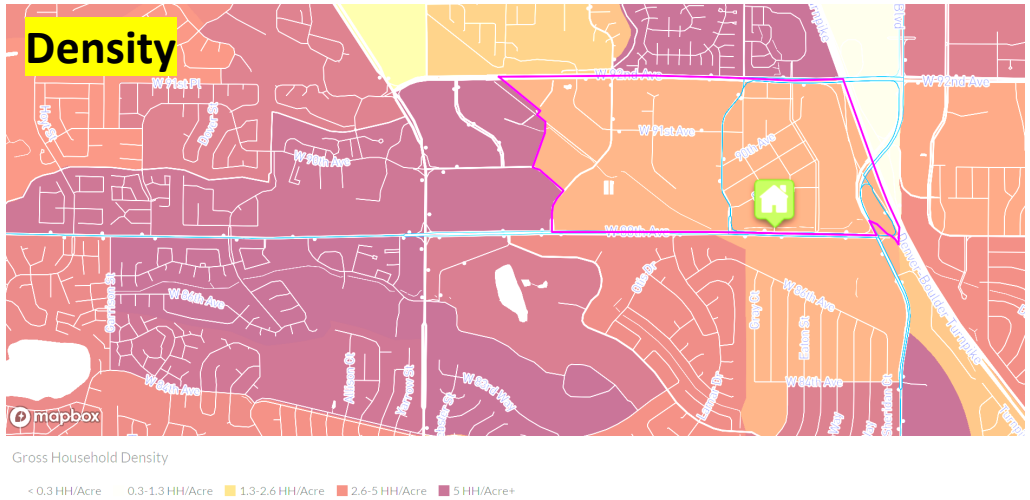
- Near rail and BRT
- Post-war suburb
- City-led redevelopment: $74M, staff, and land
- Mixed-use, density, and walkability goals
- Central Park
- 20-year timeline

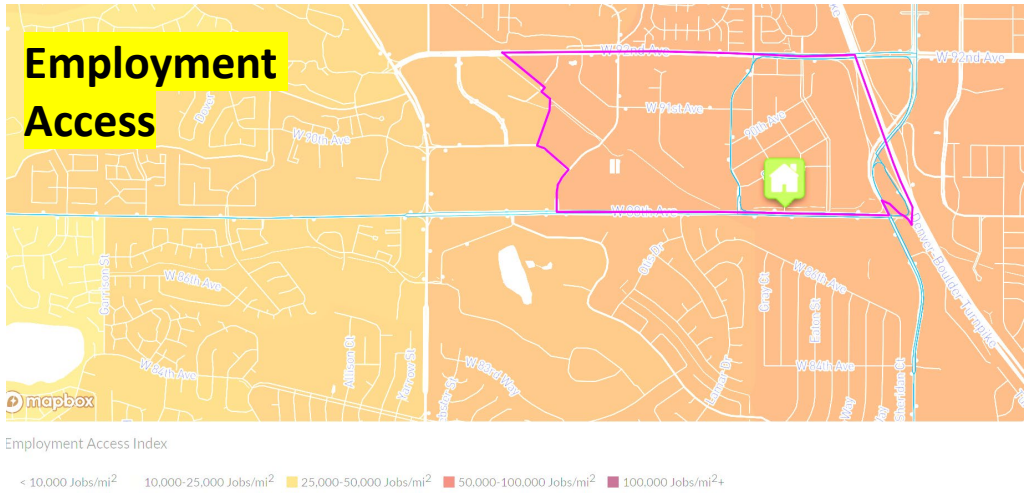


Downtown Westminster's H+T

Land use Measures

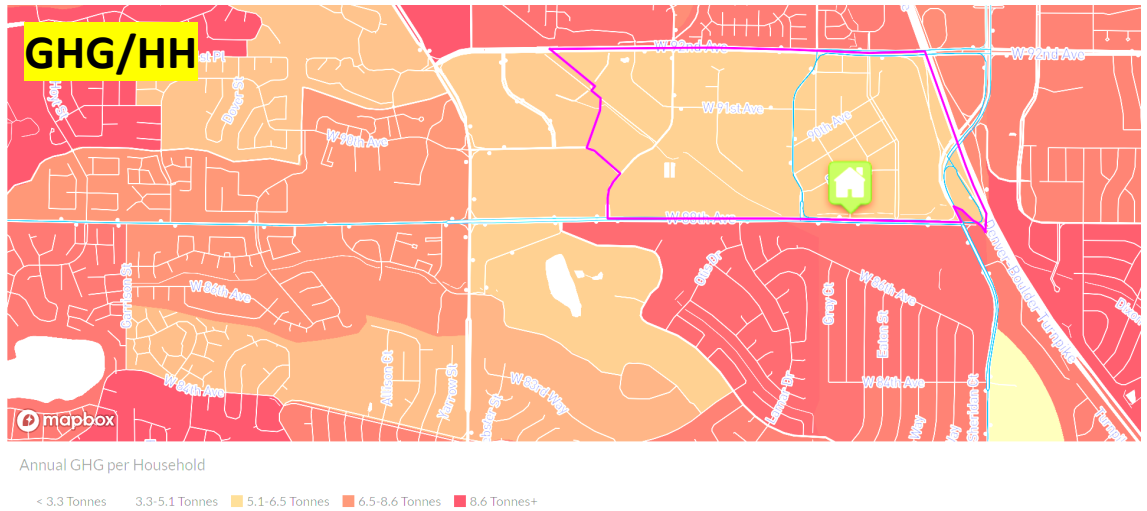
- Gross household density: 2.03 hh/acre
- Employment Access Index: 37,545 Jobs/mi^2

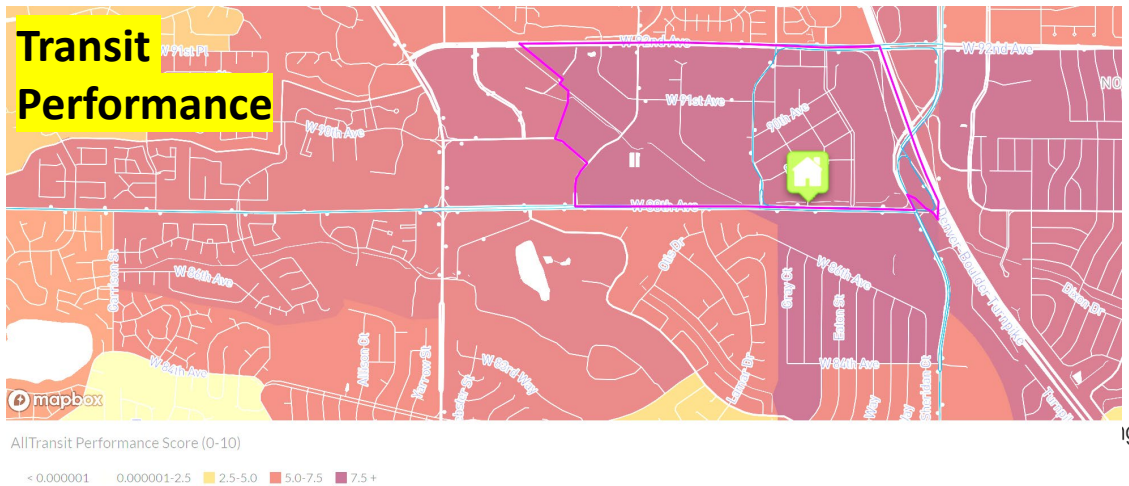




Transportation Measures

- Transport costs ~15% of a $79,664 income
- Autos/Household: 1.56
- Annual GHG/hh from VMT: 5.35 Tonnes
- AllTransit Performance Score: 7.1/10



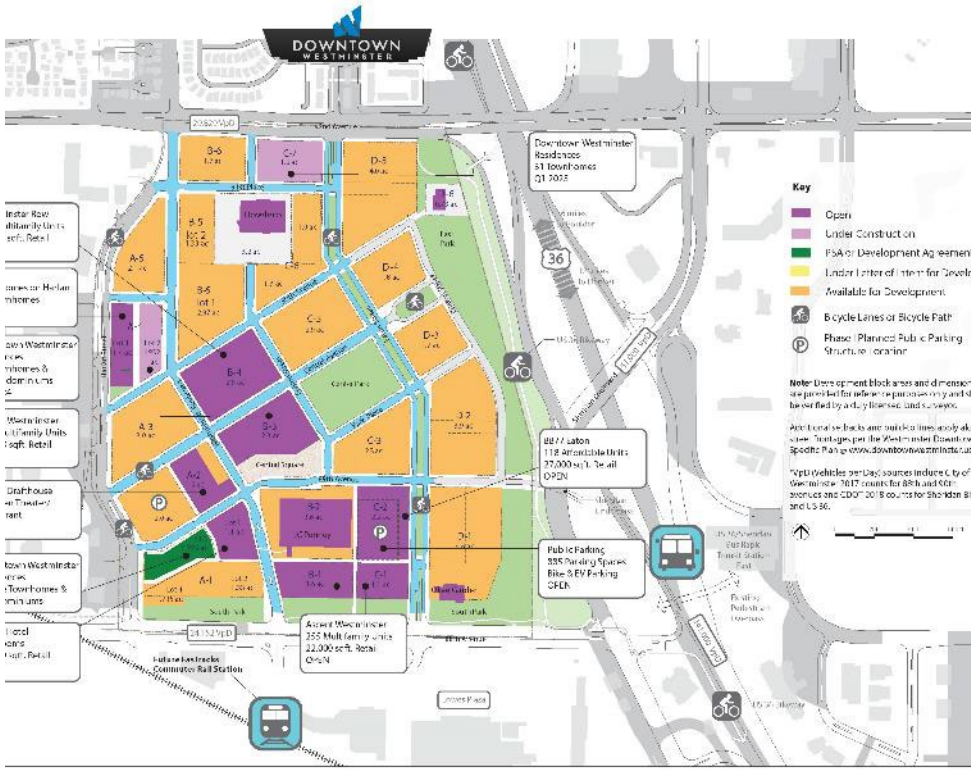


https://htaindex.cnt.org/map/#

The Vision

Strengths and areas for improvement

- Density near transit, greater densities than elsewhere in Westminster and Denver suburbs, mix of housing types
- A central park and parkways for convening, community building, mental health/nature access, sense of place
- Street connectivity, yet fairly large blocks may reduce walkability and small-scale local businesses
- Other suburban characteristics, e.g., high parking ratios, that encourage driving.



DOWNTOWN WESTMINSTER



Regional Density & Form matters

Compact design of both the neighborhood and the region matter. Low-density monocentric regions have a higher GHG footprint than moderate to high-density polycentric regions.

San Francisco Bay Area High Density Polycenters

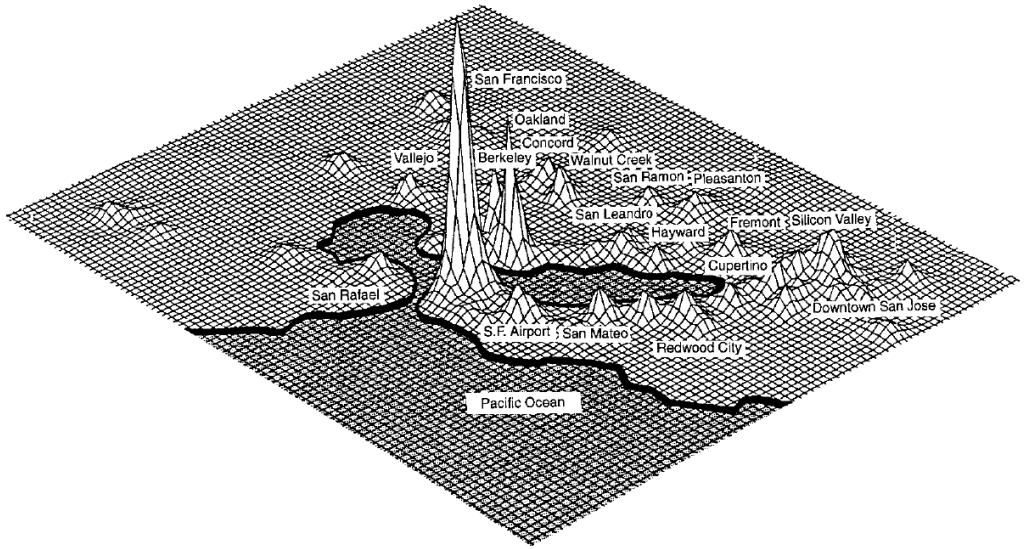
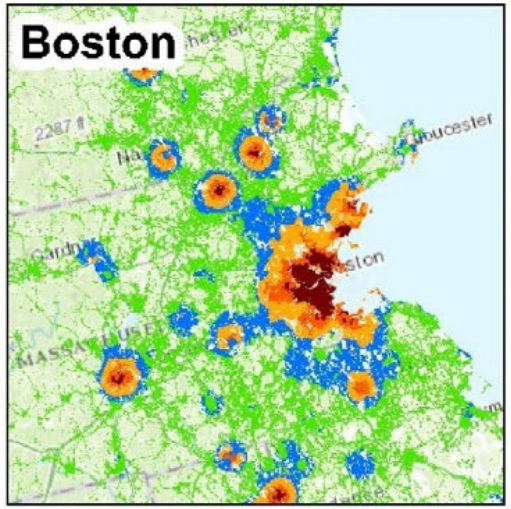
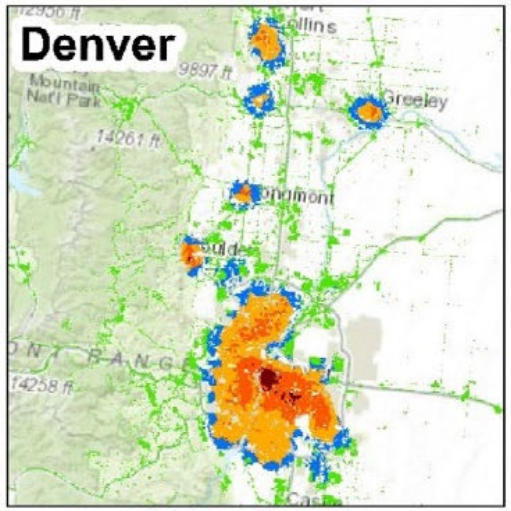


Figure 2. Three-dimensional model of employment density in the San Francisco Bay area, 1990.





Heris (2017)

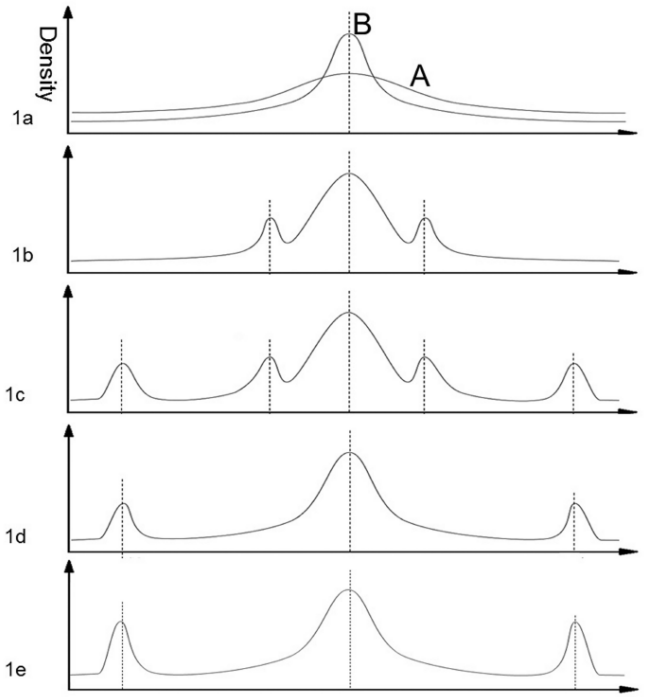
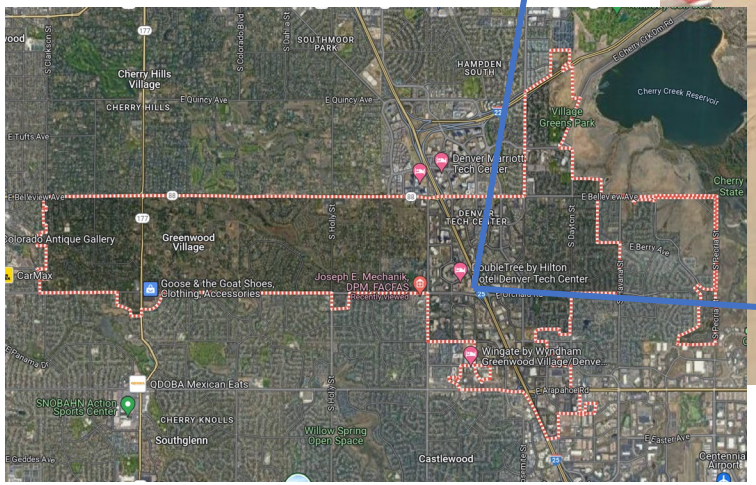


Figure 1. Conceptualizing polycentricity.

Orchard Station, Greenwood Village: TOC Opportunities?





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Urban From & H+T

1 km x 1.5 km = .58 sq mi = 320 acres

H+T Index | H+T Fact Sheets | Total Driving Costs | Comparison Maps | Data

5670 Greenwood Plaza Boul…

Household: Regional Typical | Regional Moderate | National Typical

Income: $63,731 Commuters: 1.27 workers Household Size: 2.57 people

Block Group: 080050067122

H+T Costs % Income: 81%

Housing: 64% Transportation: 17%

Housing + Transportation Costs % Income

Housing + Transportation Costs % Income

Block Group: 81%

Note: Additional statistical data is available at several larger geographies. Using the Geographic Focus Selector, you may choose the following:

CBSA: Denver-Aurora-Lakewood, CO

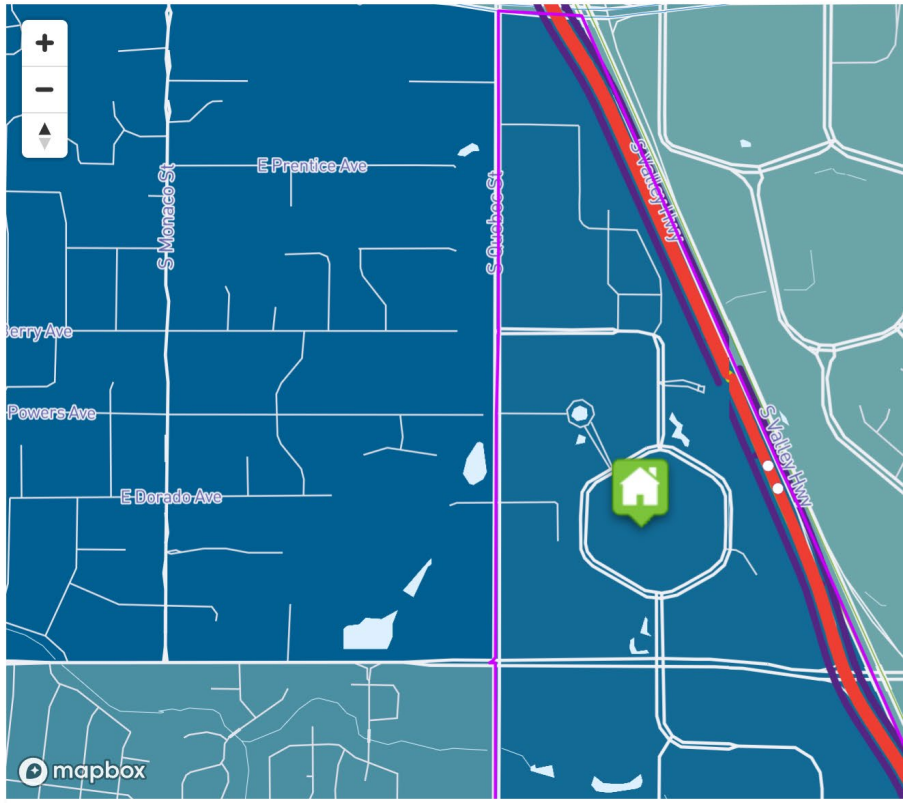
County: Arapahoe, CO

Municipality: Greenwood Village, CO

Tract: 08005006712

MPO: Denver Regional COG

U.S. House District: Colorado Congressional District 6

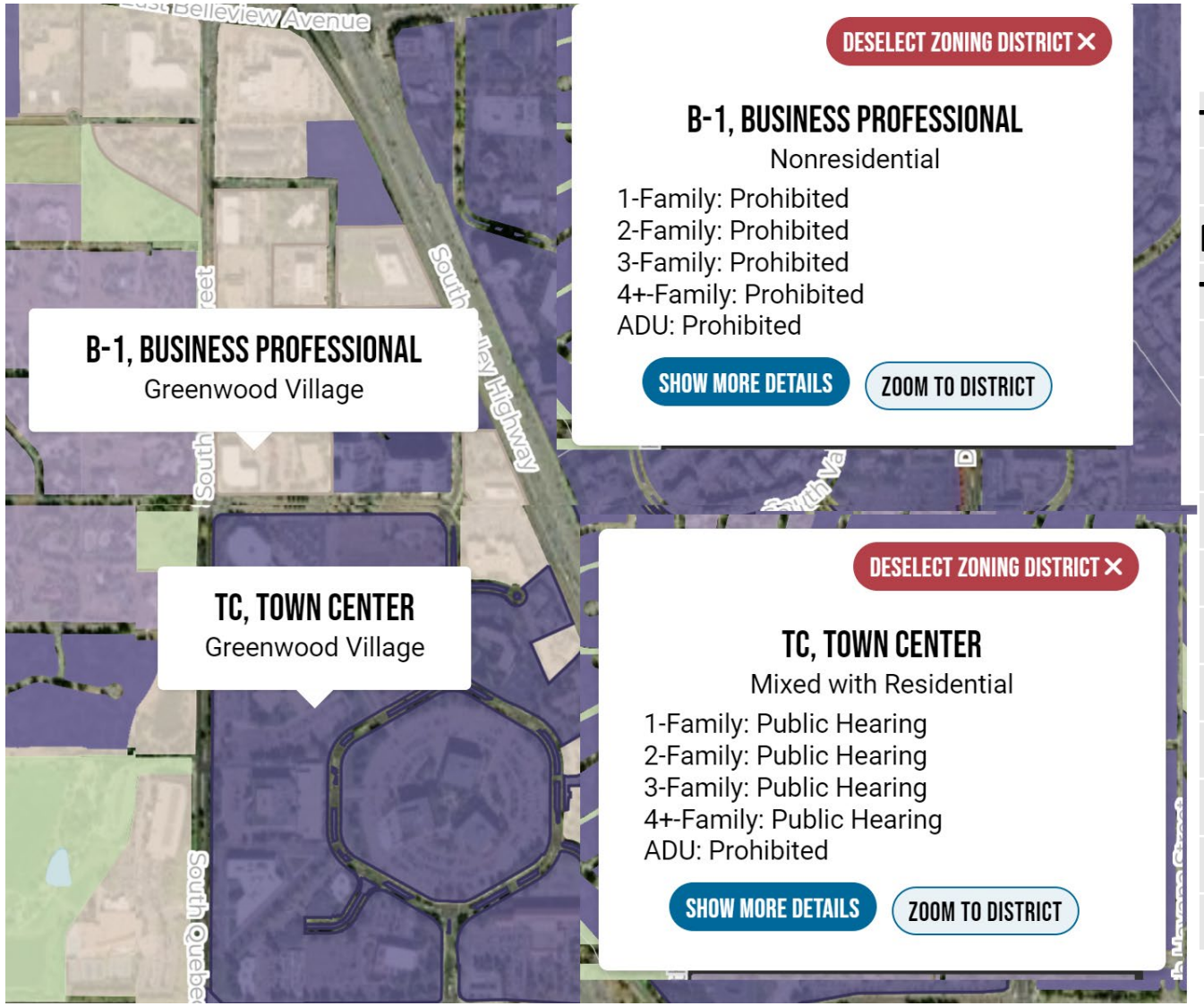


Housing + Transportation Costs % Income

< 24% | 24-36% | 36-45% | 45-54% | 54-66% | 66-78% | 78-87% | 87%+



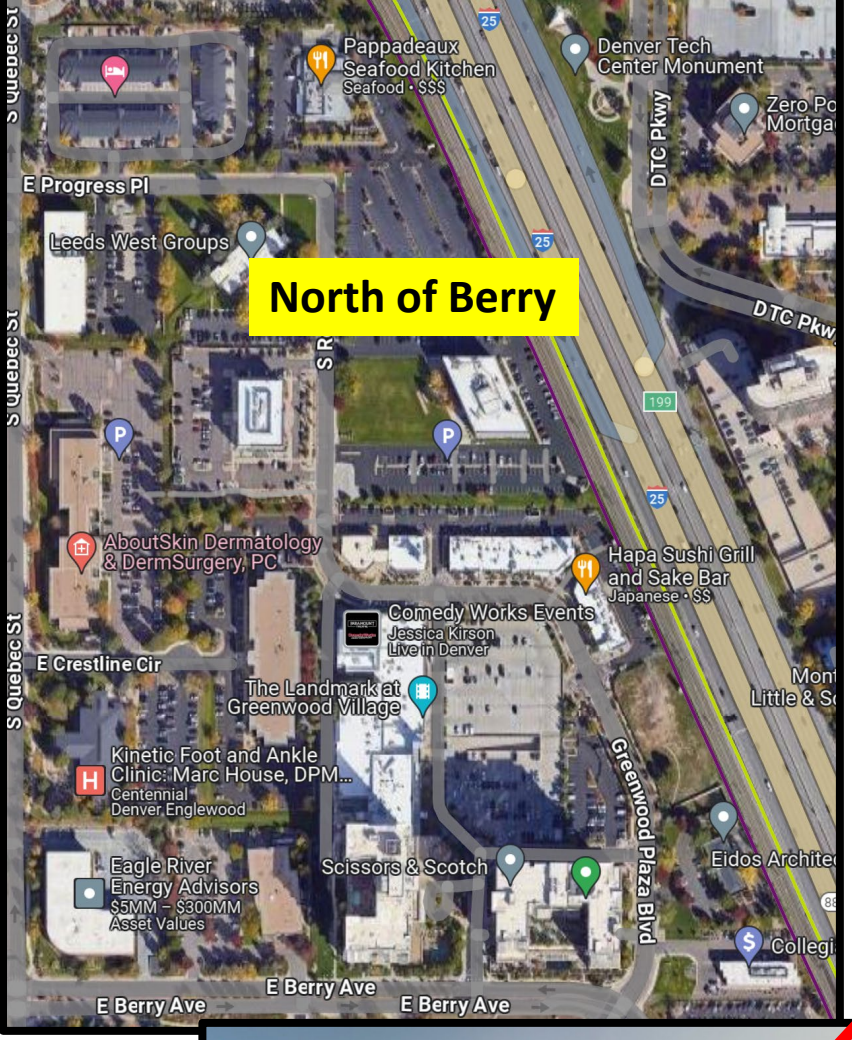
Orchard Plaza Zoning



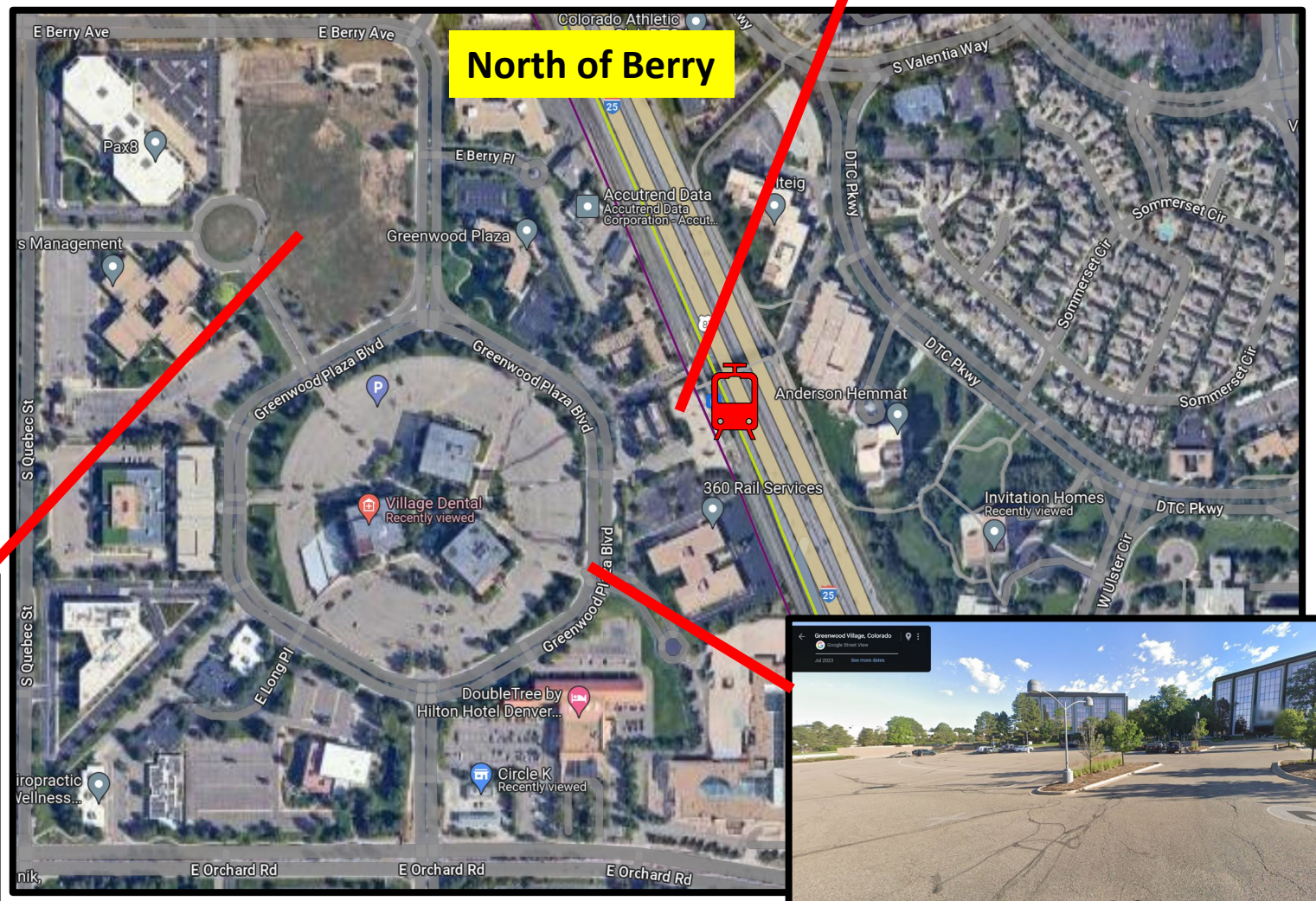
Greenwood Village, Population, Housing, & Jobs

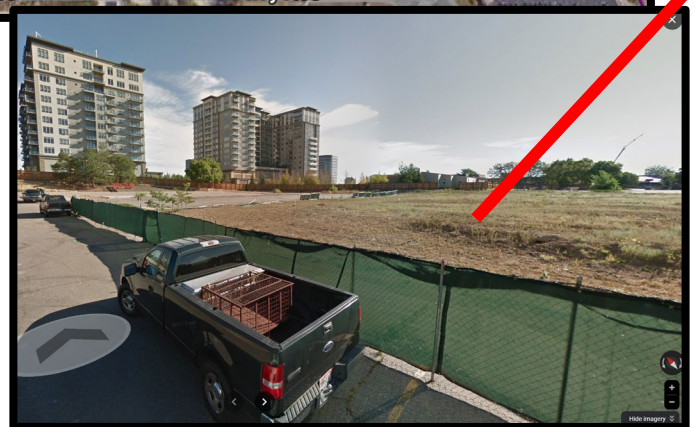
Total Jobs	**62,845**	**100%**
Jobs paying < $39,000 / year	20,213	32%
Population	**15,100**	
Total Housing Units	**6,288**	
Single Family Detached	3,282	52.20%
Attached Single Unit and 2-unit	744	11.80%
1-unit, attached	666	10.60%
2 units	78	1.20%
3-4 Units	105	1.70%
5 Units or greater	2,153	34.20%
5 to 9 units	380	6.00%
10 to 19 units	432	6.90%
20 or more units	1,341	21.30%
Mobile homes/boat/rv/van/etc.	4	0.10%
Mobile home	4	0.10%

320 acres of office buildings, including 150 acres of parking and grass









Density Examples

15 Dwelling Units Per Acre (Gross)

Notable features: A variety of housing types, pedestrian-friendly street frontages, alleys and auto courts, and common open space with trails.



Relatively new mixed-housing-type subdivision, also within the master-planned Issaquah Highlands development in Issaquah

44 Dwelling Units Per Acre (Net)

Notable features: New urban townhouses and live-work units served by underground parking and containing private patios and a centralized, shared courtyard space.



Live-work and regular townhouse units in Seattle's Lower Queen Anne neighborhood. (Landscape plan courtesy of David Vandervort Architects)

https://www.theurbanist.org/2017/05/04/visualizing-compatible-density/

27 Dwelling Units Per Acre (Net)

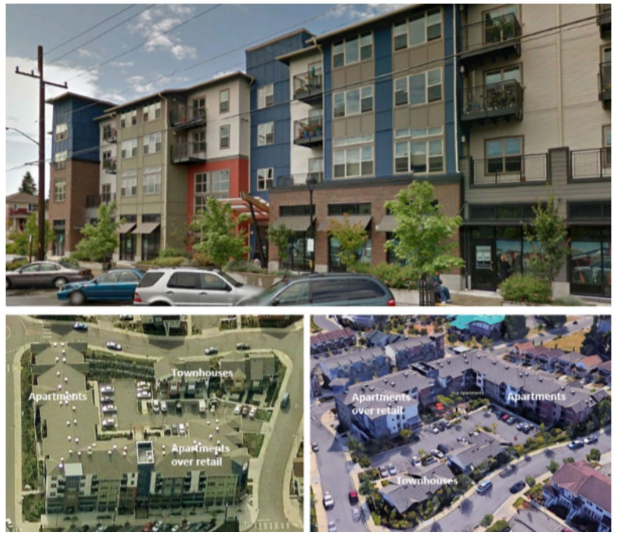
Notable features: Single and double-single family lots redeveloped with condominiums. Each building contains between three and seven units and has fror loaded parking at the street level beneath the dwelling units. All are built within a strict 30-foot height limit; hence, the flat roofs.



5th Avenue Condominiums in Kirkland.

59 Dwelling Units Per Acre (Net)

Notable features: The whole block site transitions from four-story buildings with ground level retail to townhomes that rise only one level above the street at the northwest corner of the site. While the L-shaped, mixed-use apartment building is over 100 dwelling units per net acre, the surface parking area and townhouse building bring the block's average density down to 59 units per net acre.



Nia Apartments and townhouses in White Center. (King County)

36 Dwelling Units Per Acre (Net)

Notable features: A cluster of single-family homes integrated into surrounding neighborhood with alley and internal auto-court access, private garages, a large cedar tree, and a manmade strea



Detached single-family homes in The Boulders at Green Lake development in Seattle. (Johnston Architects)

162 Dwelling Units Per Acre

Notable features: A 6-story, mixed-use apartment building in the very urban, First Hill neighborhood.



Apartments over ground-level retail in Seattle's First Hill neighborhood. (GGLO / Google Earth).