CTOD CENTER FOR TRANSIT-ORIENTED DEVELOPMENT

Employment and TOD

SPUR

September 16, 2010

Dena Belzer – Strategic Economics
Ellen Greenberg - Arup
Jeff Wood – Reconnecting America

What is the CTOD?

The CTOD conducts ongoing research and advance the state of practice related to creating development around transit that supports transit ridership, creates a greater array of housing and workplace choices, and delivers the many economic, environmental, and social benefits associated with reduced auto-dependency.

Primary partnership between

Reconnecting America

Strategic Economics

Reconnecting America

But, work in other collaborations!

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Employment and Transit Fits into the National Discussion on Several Key Topics:

- Planning for sustainable communities at the REGIONAL level
- Addressing the issue of "Job Sprawl"
- Understanding how to plan for higher performing transit – changes in the "new starts criteria"
- Providing transit systems that are more"equitable"

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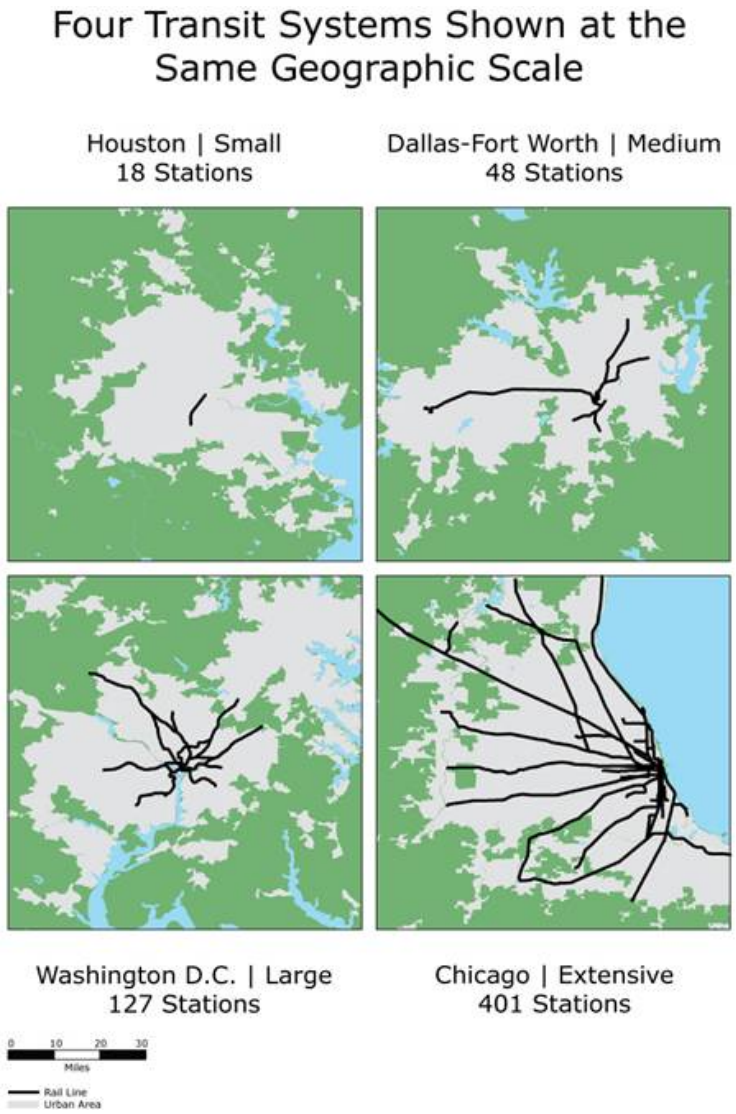
There are 30(ish) Transit Regions In the U.S., With More to Come

Transit System Size Matters

System Size Classifications	
Extensive Systems	201 or more stations
Large Systems	70 – 200 stations
Medium Systems	25 to 69 stations
Small Systems	1 to 24 stations



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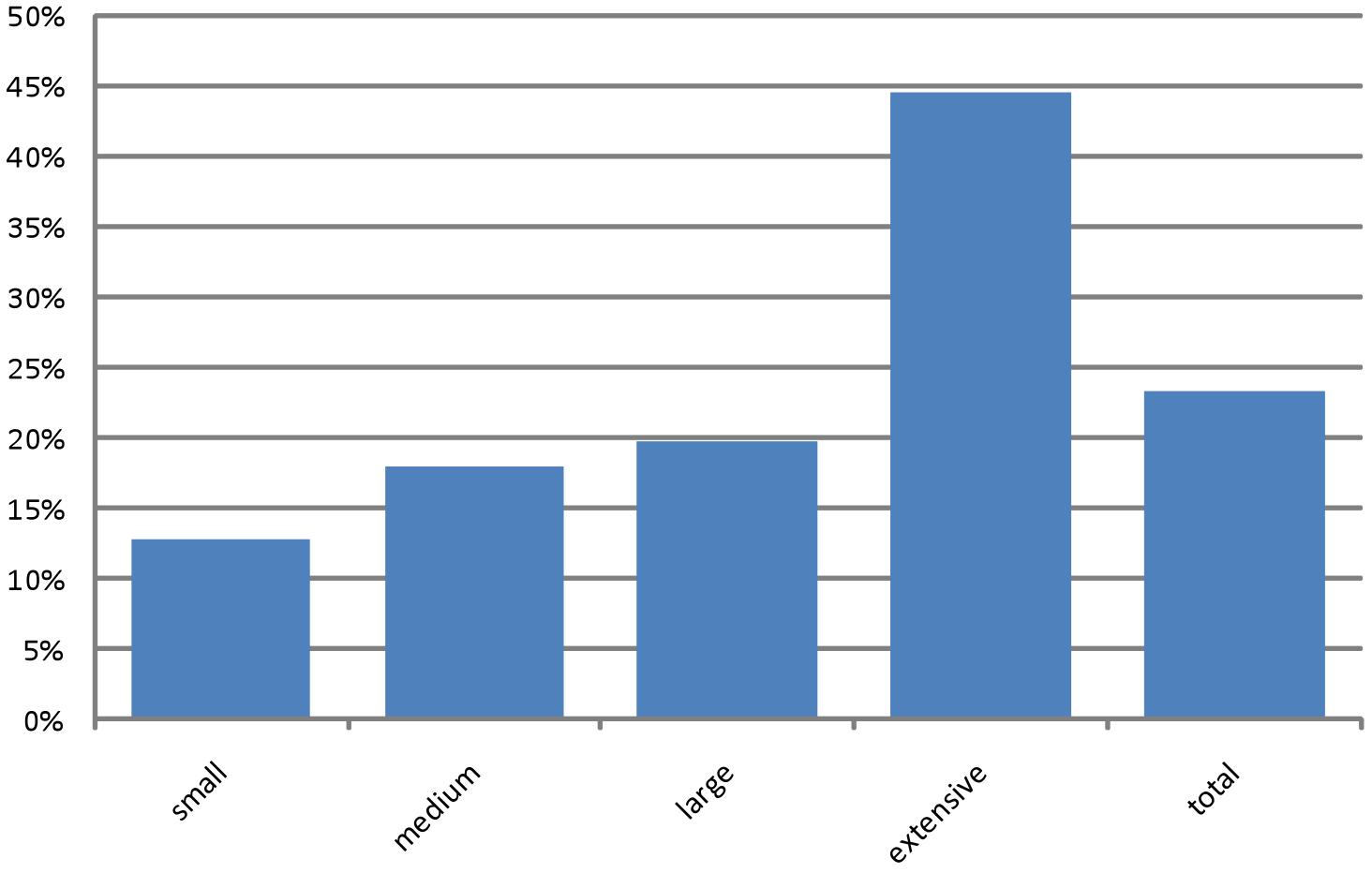
On Average, About 25 Percent of all Jobs in Transit Regions are Located Near Transit, but Varies by System Size



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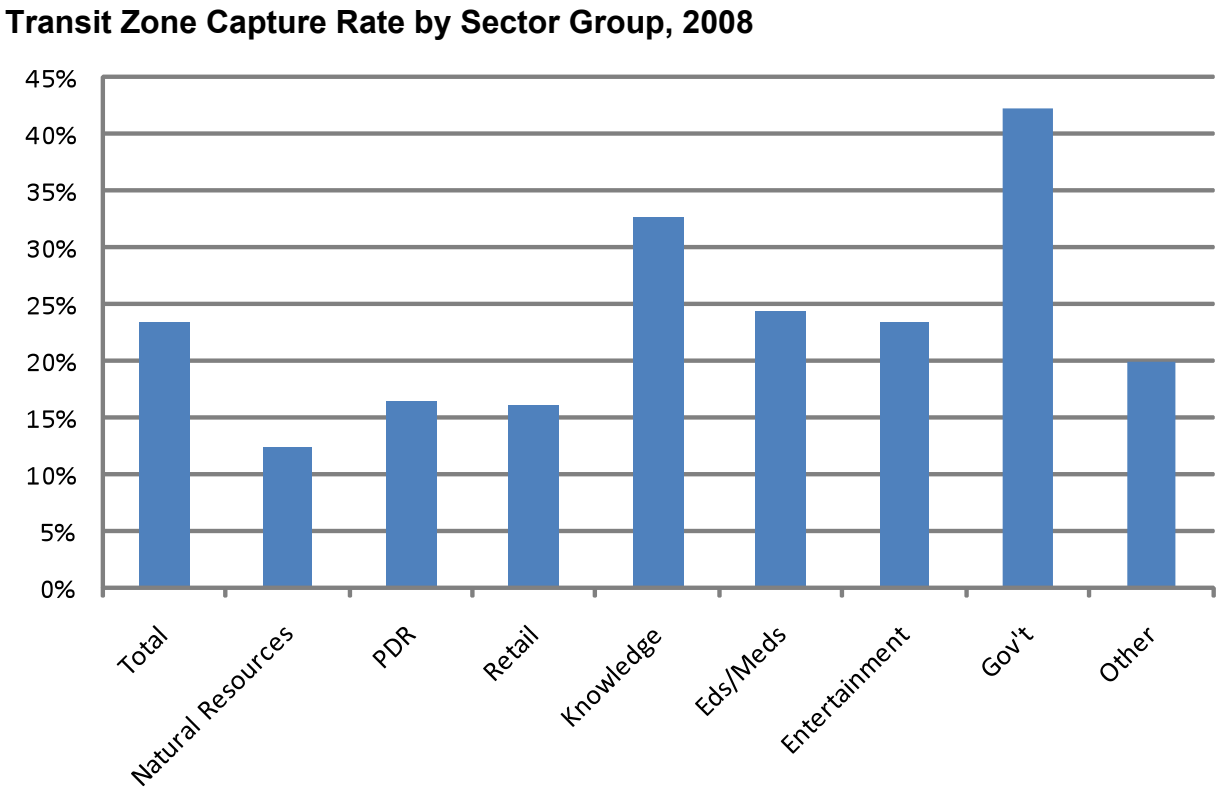
Different Sectors Have A Varying Propensity to Cluster Near Transit



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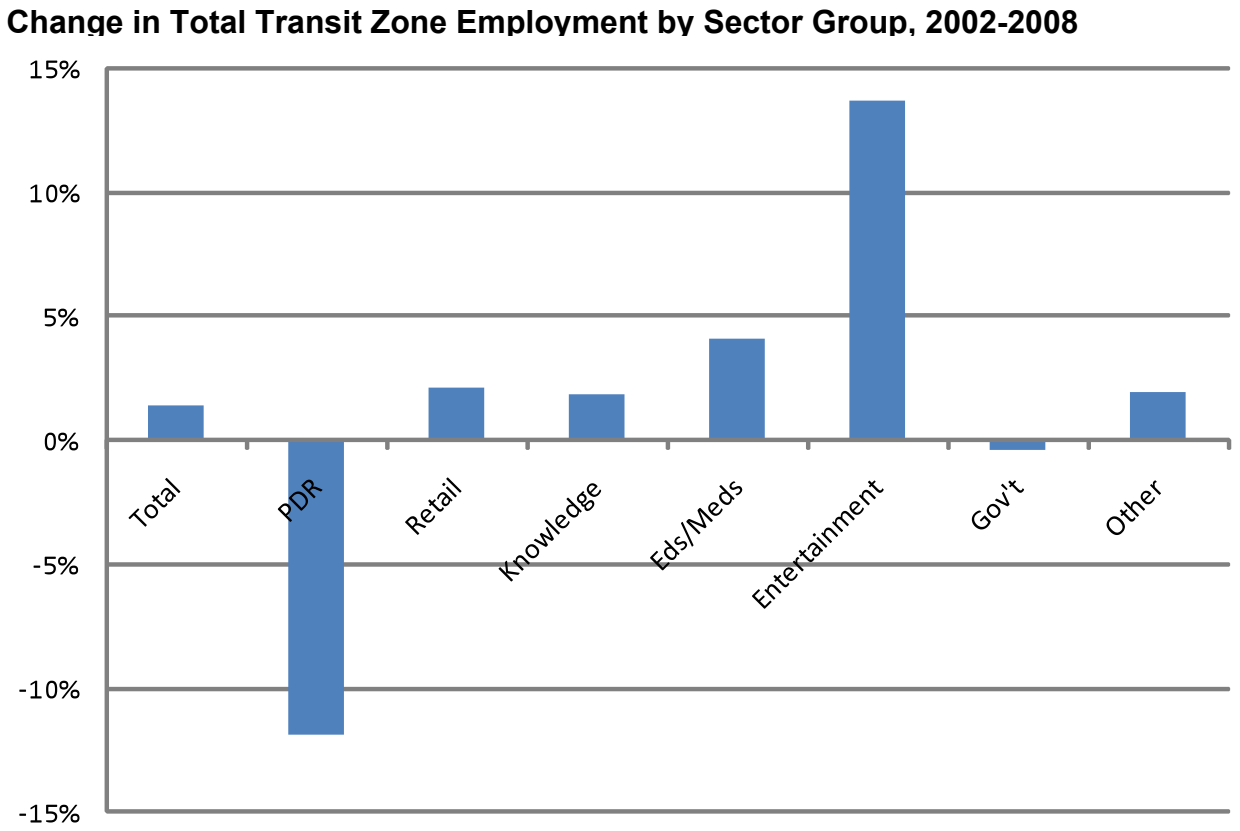
Employment in these Transit Zones Has Increased 2002-2008



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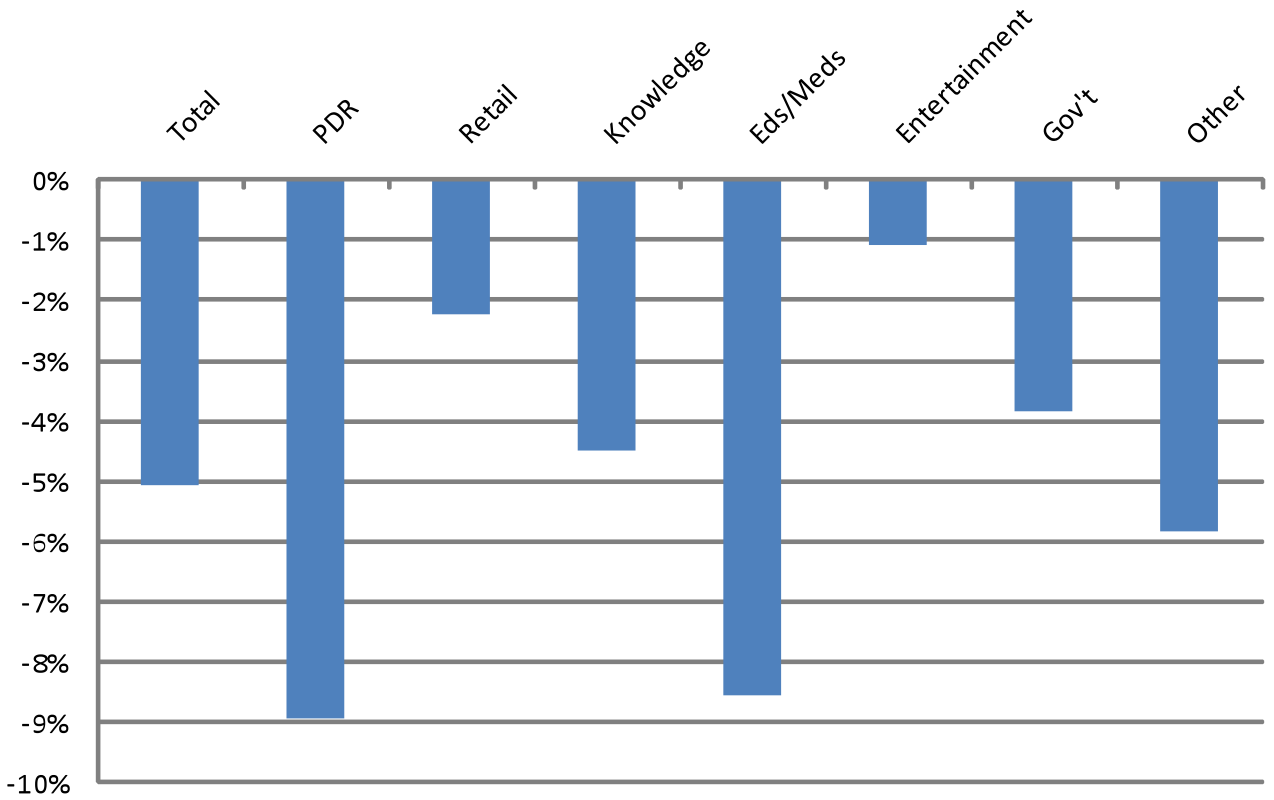
Although, As A Share of Total Jobs, Transit Zones Have "Lost Ground"

Change in Transit Zone Capture Rate by Sector Group, 2002-2008



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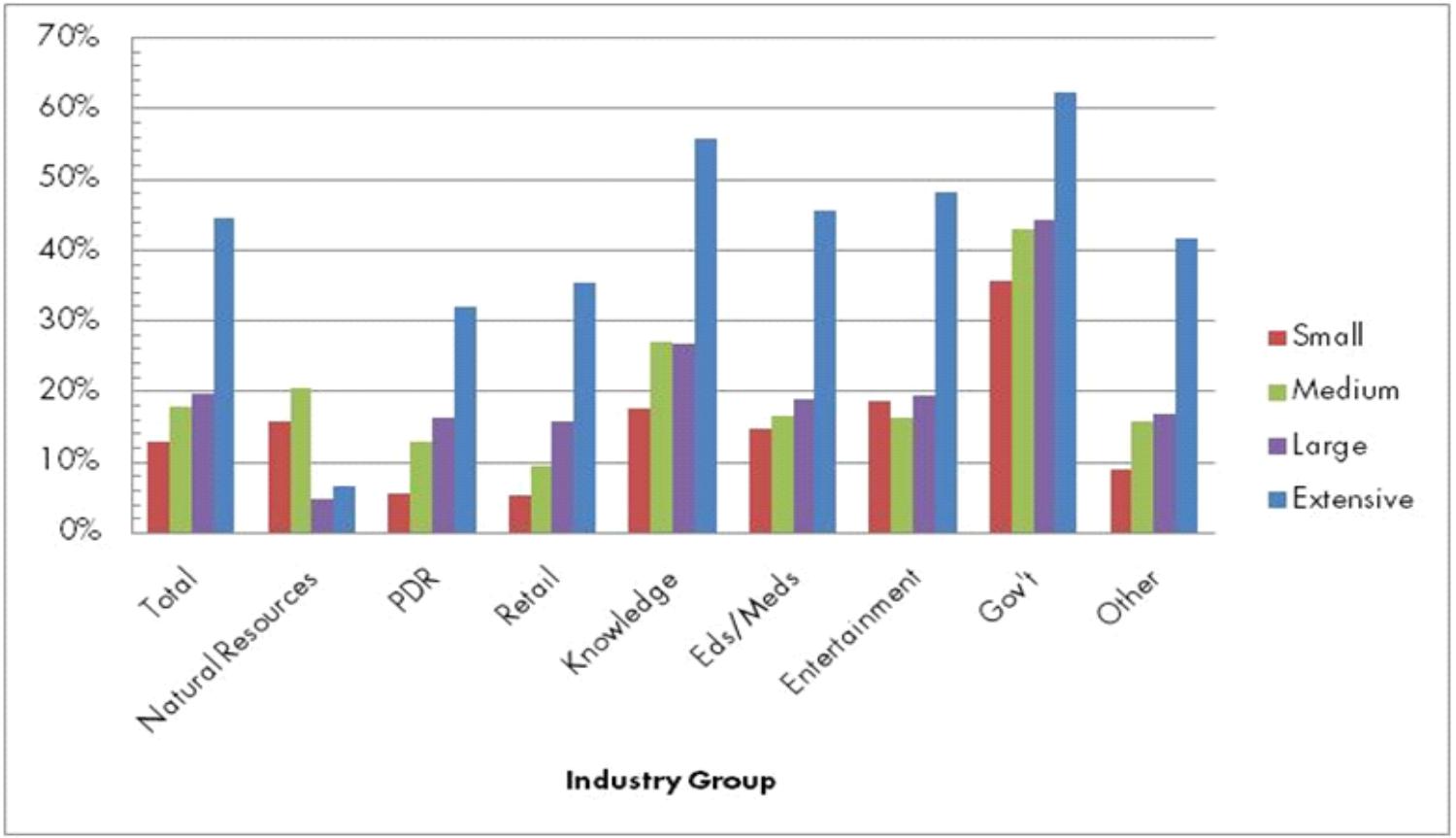
But system size is a critical factor driving the share of employment located near transit

Transit Zone Capture Rate by Sector Group and System Size, 2008



Source: LEHD 2008, Center for Transit Oriented Development 2010

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TRANSIT + EMPLOYMENT

Increasing Transit's Share Of The Commute Trip

Reconnecting America and
the Center for Transit-Oriented Development

Why Focus on the Transit Commute?

Commute trips are:

- Fundamental to transit productivity
- Biggest single component of peak hour travel demand
- Critical to regional economic sustainability
- Often overlooked in TOD discussion

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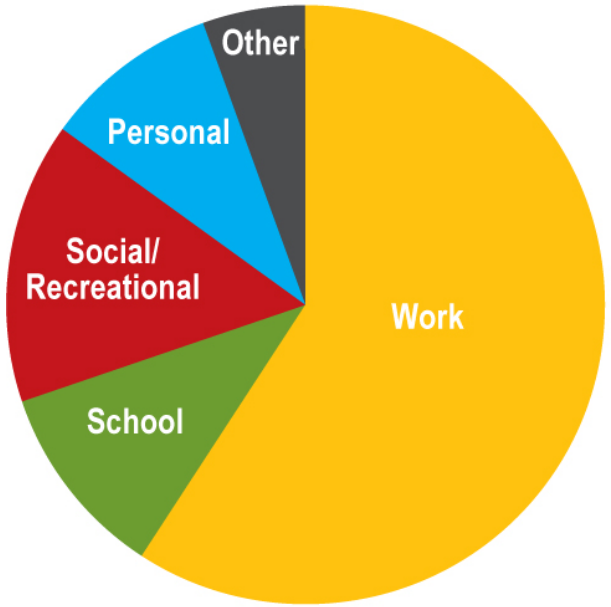
The Transit Commute:

Fundamental to transit productivity



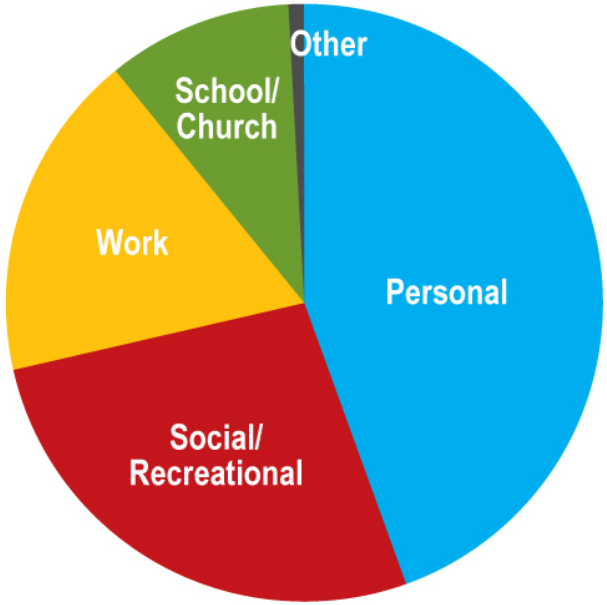
Transit Trip Purpose	% Of Trips
Work	59.2
School	10.6
Social/ Recreational	15.3
Personal	9.3
Other	5.7

***Source**: 2007 APTA Transit Factbook*

- By a wide margin, the largest group of transit trips are commute trips
- Commuters are a key to transit's productivity

The Transit Commute:

Work Trips Are Less than 20% of Total Trips



Trip Purpose	% Of Trips
Personal	44.5
Social/ Recreational	26.9
Work	17.8
Scool/Church	9.8
Other	0.9

Source: *Commuting in America III*

- Work trips are concentrated by day of week and time of day
- Non-work trips make up a growing share of peak hour trip making

The Impact
of the Commute Trip

Commuting

- bears an importance to transportation beyond its share of total travel
- is a major factor in determining peak travel demand …
- defines the high-cost of peak capacity far more than other purposes of travel

From *Commuting in America* III by Alan Pisarski

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What Pisarski Fails to Say….

1. Choices about how commute travel demand is met have an enormous impact on the physical fabric of our communities

What Pisarski Fails to Say….

2. These choices can help or hinder communities as they try to achieve other important goals

The Transit Commute helps resolve this tension

VS.

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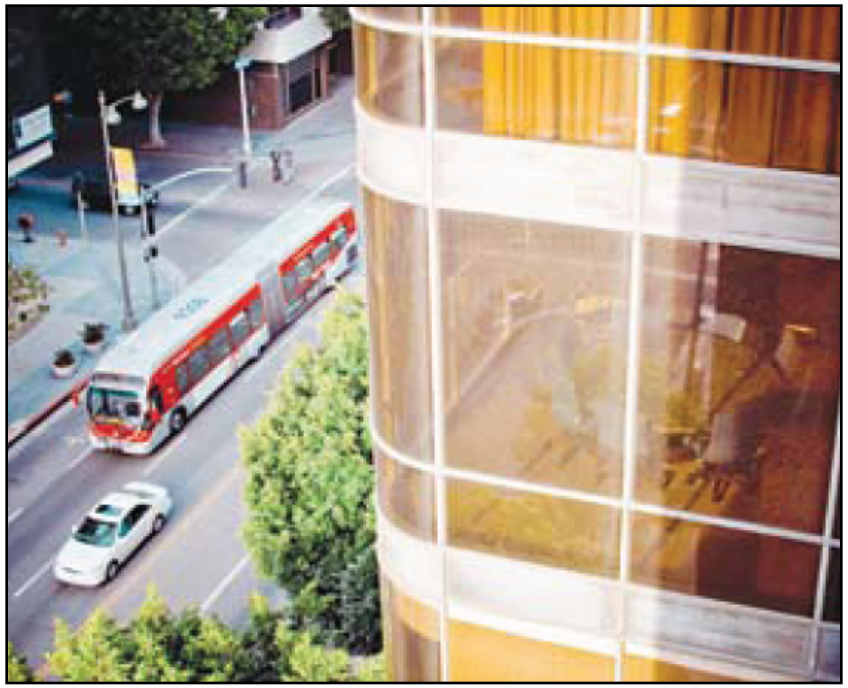
People Who Work Near Transit are much more likely to ride transit

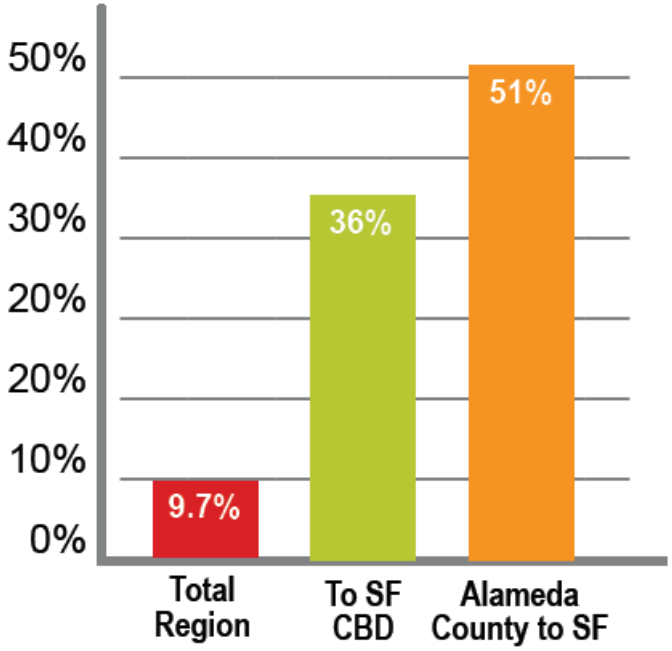


- About 20% of California workers in suburban office near transit commute by transit (Cervero, 2006)
- High quality transit, expensive parking and nearby convenience services all build ridership

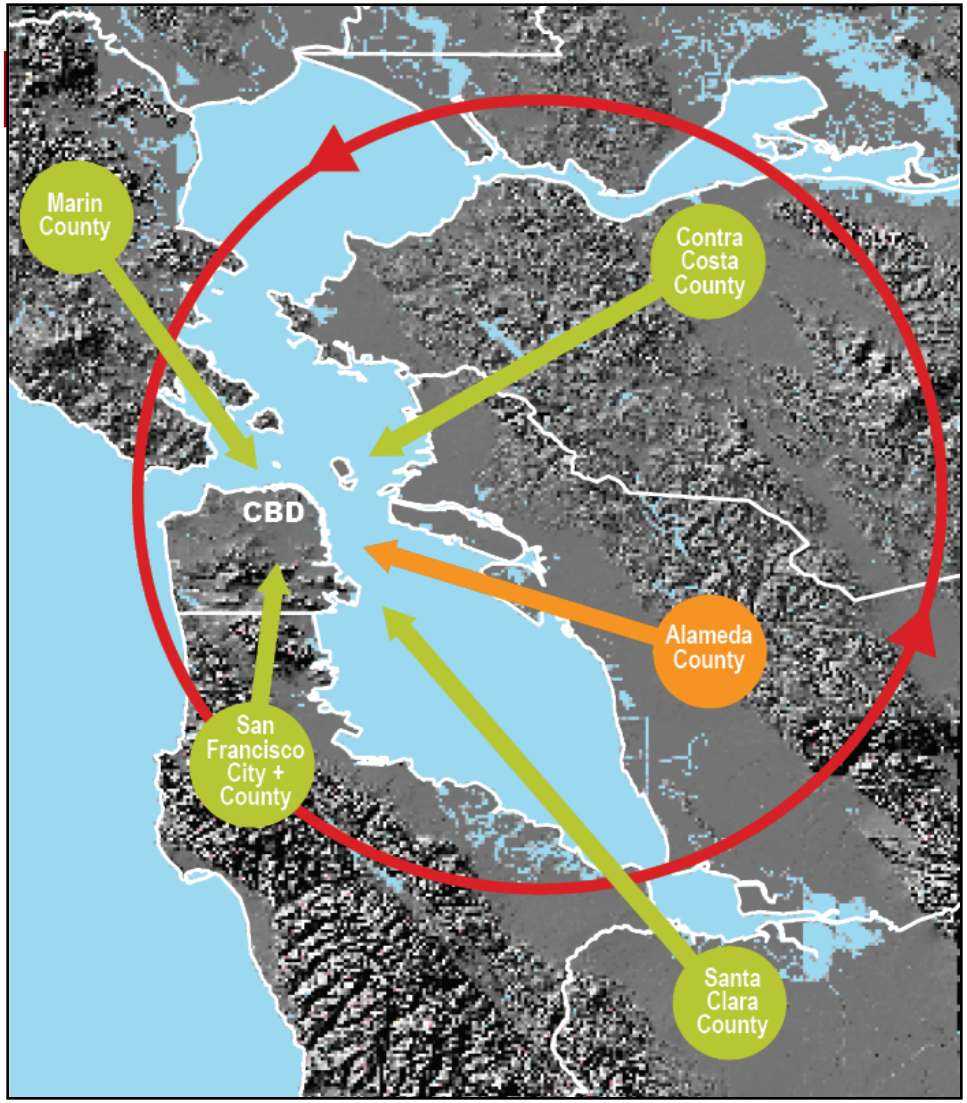
Transit's Share of the Commute Trip

of the Commute Tri

Highly Correlated with Population and



Source: *Commuting in America III*

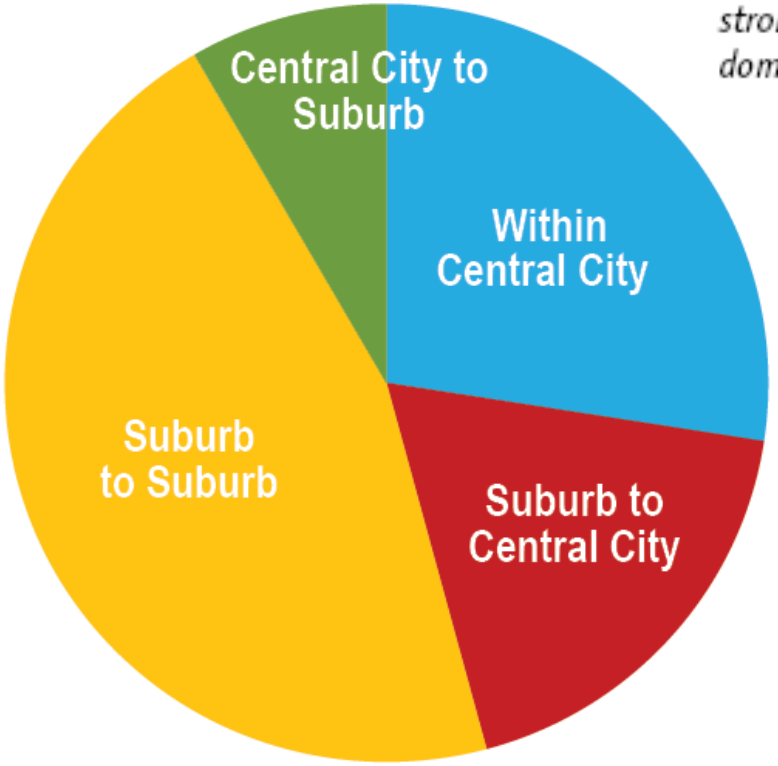


Dispersed Land Use Patterns

have a negative effect on transit use

FIGURE 7: ***Major Metropolitan Commuter Flows***

The suburb-to-central-city commute can attract high numbers of transit commuters in metro areas with a strong center and transit network, but since 1980 the dominant commute flow has been suburb-to-suburb.



Metropolitan Flows	Workers
Within Central City	24,506,065
Suburb to Central City	16,598,820
Suburb to Suburb	40,804,660
Central City to Suburb	7,532,770

Source: *Commuting in America III*

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Urban Form & Employment Decentralization

Leapfrogging

Boomburgs

Edge Cities

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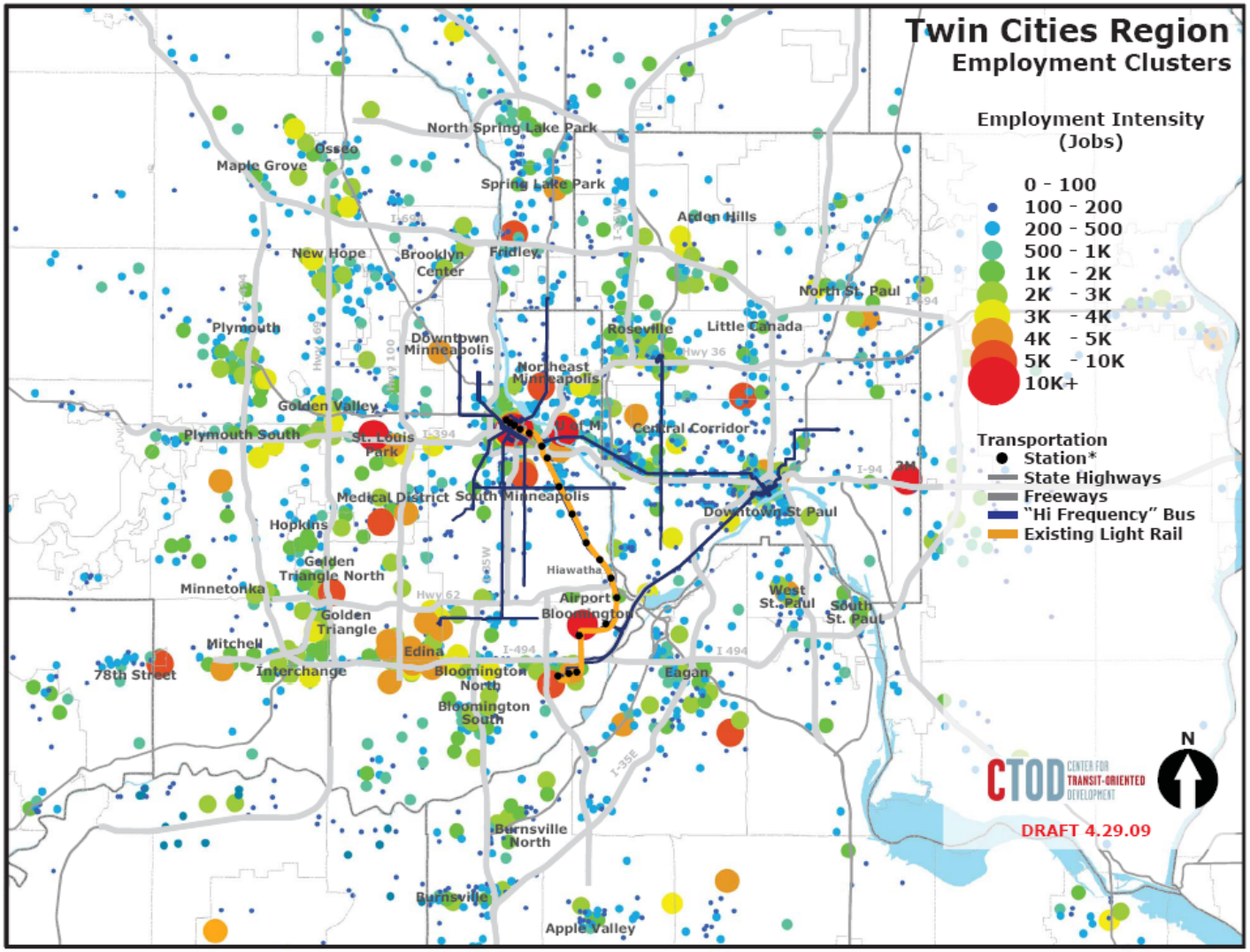
Twin Cities – Destinations?



Cluster	Jobs
Downtown Minneapolis	146,129
Downtown St. Paul	74,895
Edina	72,830
Bloomington Airport	46,312
Eagan	40,442
St. Louis Park	37,013
U of M	35,478
Roseville	29,220
Central Corridor	28,084
South Minneapolis	26,935
Northeast Minneapolis	25,651
Osseo	24,239
Plymouth	20,532
Bloomington South	19,365
Medical District	18,179
North Golden Triangle	17,824
Spring Lake Park	17,519
78th Street	16,923
Arden Hills	16,884
Plymouth South	16,255
Little Canada	15,859
Bloomington North	15,732
Golden Valley Plymouth	15,702
North St. Paul	14,982
Golden Triangle	13,521
3M	13,230
494/212 Interchange	11,916
New Hope	11,890
Burnsville	10,691
Brooklyn Center	9,567
North Burnsville	9,191
North Spring Lake Park	9,046
West St. Paul	8,943
Mitchell	8,590
Fridley	8,216
South St. Paul	6,919
Hopkins	6,457
Apply Valley	6,133
Minnetonka	5,733
Maple Grove	3,892

Other Map Notes:

Job data from 2004 US Census Longitudinal Employer-Household Dynamics (LEHD). All data derived at the census block level.

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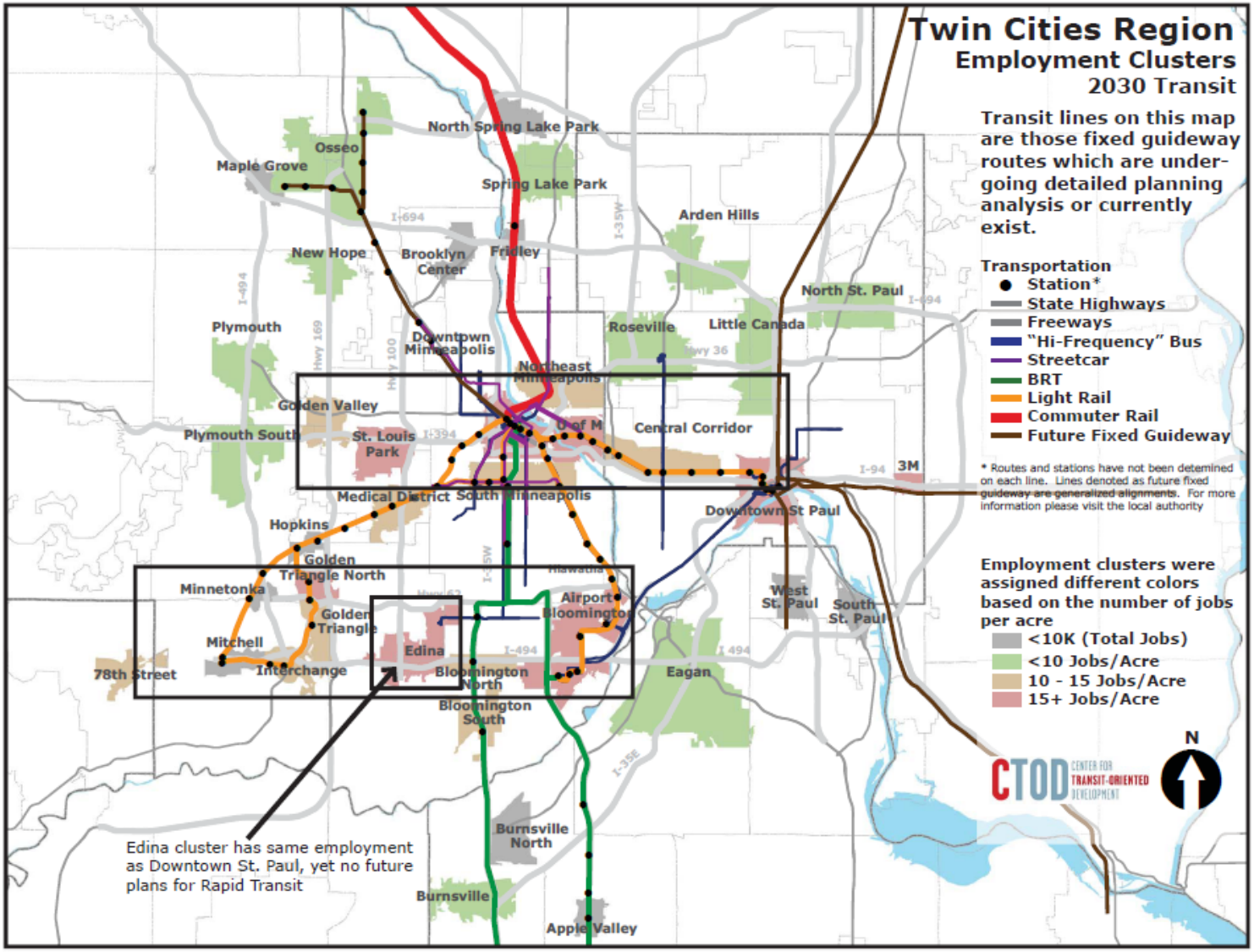


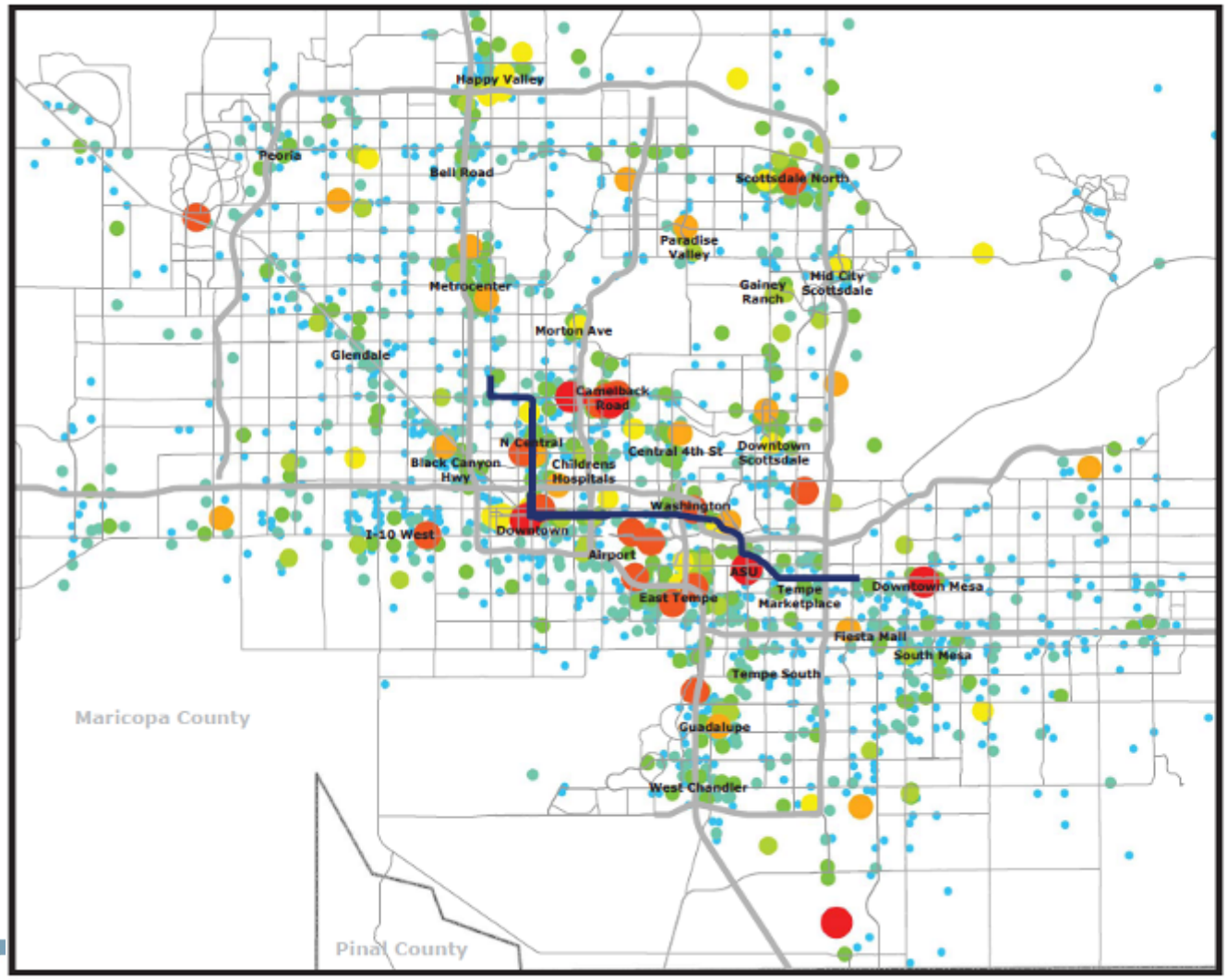
Cluster	Jobs	Jobs /Acre
DT Minneapolis	146,129	55.33
DT St. Paul	74,895	23.77
Edina	72,830	27.22
Bloomington Airport*	46,312	22.43
Eagan	40,442	4.72
St. Louis Park	37,013	19.24
U of M	35,478	21.08
Roseville	29,220	7.55
Central Corridor	28,084	10.58
S Minneapolis	26,935	10.41
NE Minneapolis	25,651	11.40
Osseo	24,239	4.17
Plymouth	20,532	8.25
Bloomington South	19,365	12.98
Medical District	18,179	10.98
N Golden Triangle	17,824	20.79
Spring Lake Park	17,519	7.09
78th Street	16,923	15.66
Arden Hills	16,884	7.34
Plymouth South	16,255	5.26
Little Canada	15,859	5.18
Bloomington North	15,732	14.51
Golden V/ Plymouth	15,702	11.15
N St. Paul	14,982	5.21
Golden Triangle	13,521	11.17
3M	13,230	30.32
Interchange	11,916	11.03
New Hope	11,890	8.51
Burnsville	10,691	4.92
Brooklyn Center	9,567	8.41
North Burnsville	9,191	4.92
N Spring Lake Park	9,046	6.82
W St. Paul	8,943	8.31
Mitchell	8,590	10.17
Fridley	8,216	13.72
S St. Paul	6,919	6.43
Hopkins	6,457	12.74
Apply Valley	6,133	8.12
Minnetonka	5,733	16.15
Maple Grove	3,892	5.77

Other Map Notes:

Job data from 2004 US Census Longitudinal Employer-Household Dynamics (LEHD). All data derived at the census block level.

* Airport doesn't include runway acres.
All densities are approximate

Phoenix



Phoenix Regional Employment

Employment Intensity

Legend

Workers

- 200 - 500
- 500 - 1,000
- 1,000 - 2,000
- 2,000 - 3,000
- 3,000 - 4,000
- 4,000 - 5,000
- 5,000 - 10,000
- 10,000+

- County Line
- Roads
- Light Rail

Cluster	Workers/ Acre	Workers
Downtown	62.03	96,823
North Central	36.66	56,312
Camelback Road	28.50	87,850
Scottsdale DT	25.40	34,212
Arizona State	24.60	25,963
Mesa DT	24.56	27,978
Metrocenter	21.06	53,215
East Tempe	17.67	106,184
Paradise Valley	15.33	16,216
Morton Ave	15.12	10,152
Guadalupe	14.93	33,662
Washington Street	14.68	30,012
4th Street North	14.37	16,544
Childrens Hospitals	14.08	14,824
Black Canyon Hwy	12.48	36,519
Fiesta Mall	12.08	15,147
Scottsdale North	11.88	54,006
Mid City	10.90	12,307
Happy Valley	10.68	41,986
Bell Road	10.62	10,535
Gainey Ranch	10.32	11,909
Airport	9.85	43,149
Glendale	9.46	20,975
Tempe Marketplace	9.23	17,836
Tempe South	9.14	13,906
West Chandler	8.41	20,302
South Mesa	7.84	25,464
I-10 West	7.07	35,328
Peoria	5.32	11,341

Sources:
CTOD 2009, LEHD 2006, US Census Bureau

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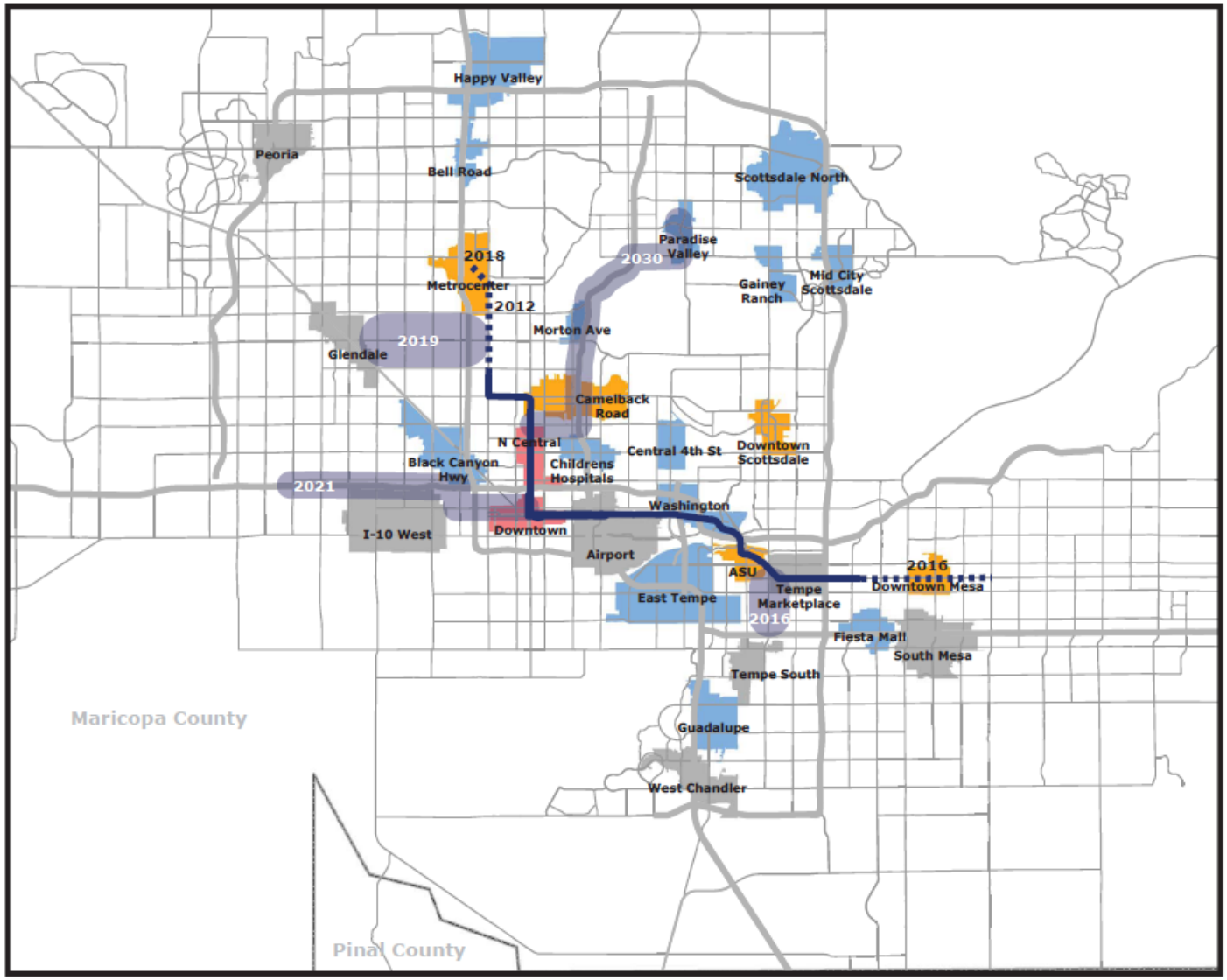

Phoenix Regional Expansion

Employment Density & Mix

Legend

Cluster Worker Density (Workers/Acre)

- < 10
- 10-20
- 20-30
- 30+
- County Line
- Roads
- Light Rail
- Designed Extensions
- Corridors for Further Study

N

Cluster	Workers/ Acre	Workers
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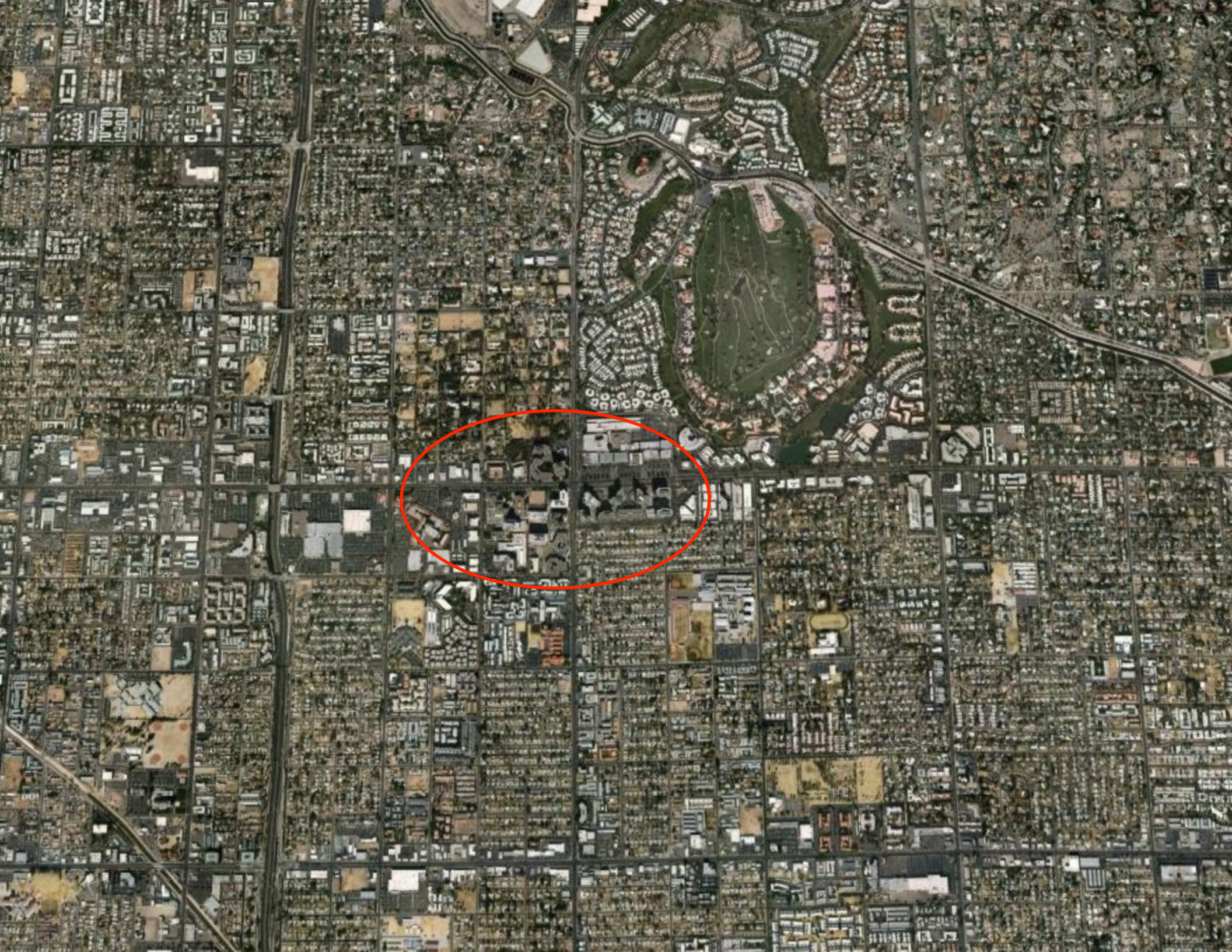

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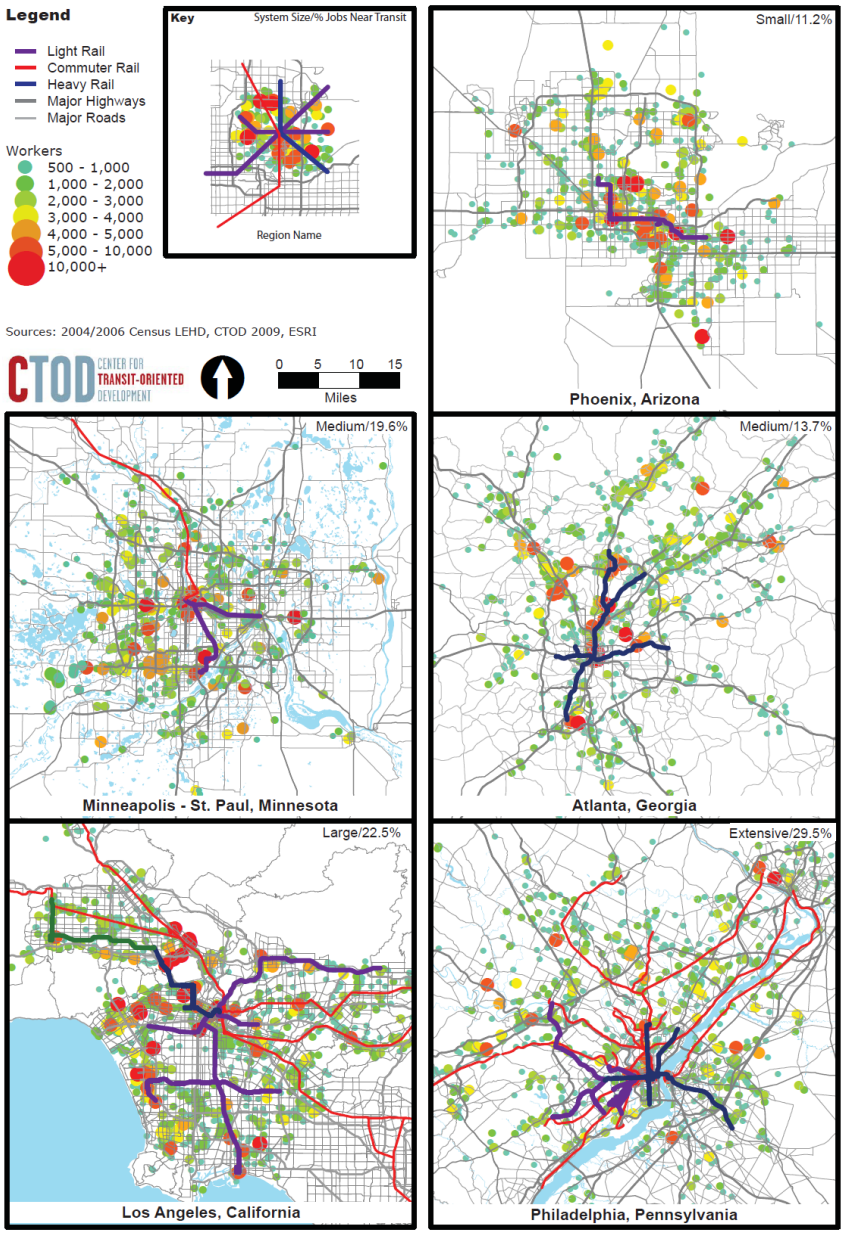
Regional Employment Compared



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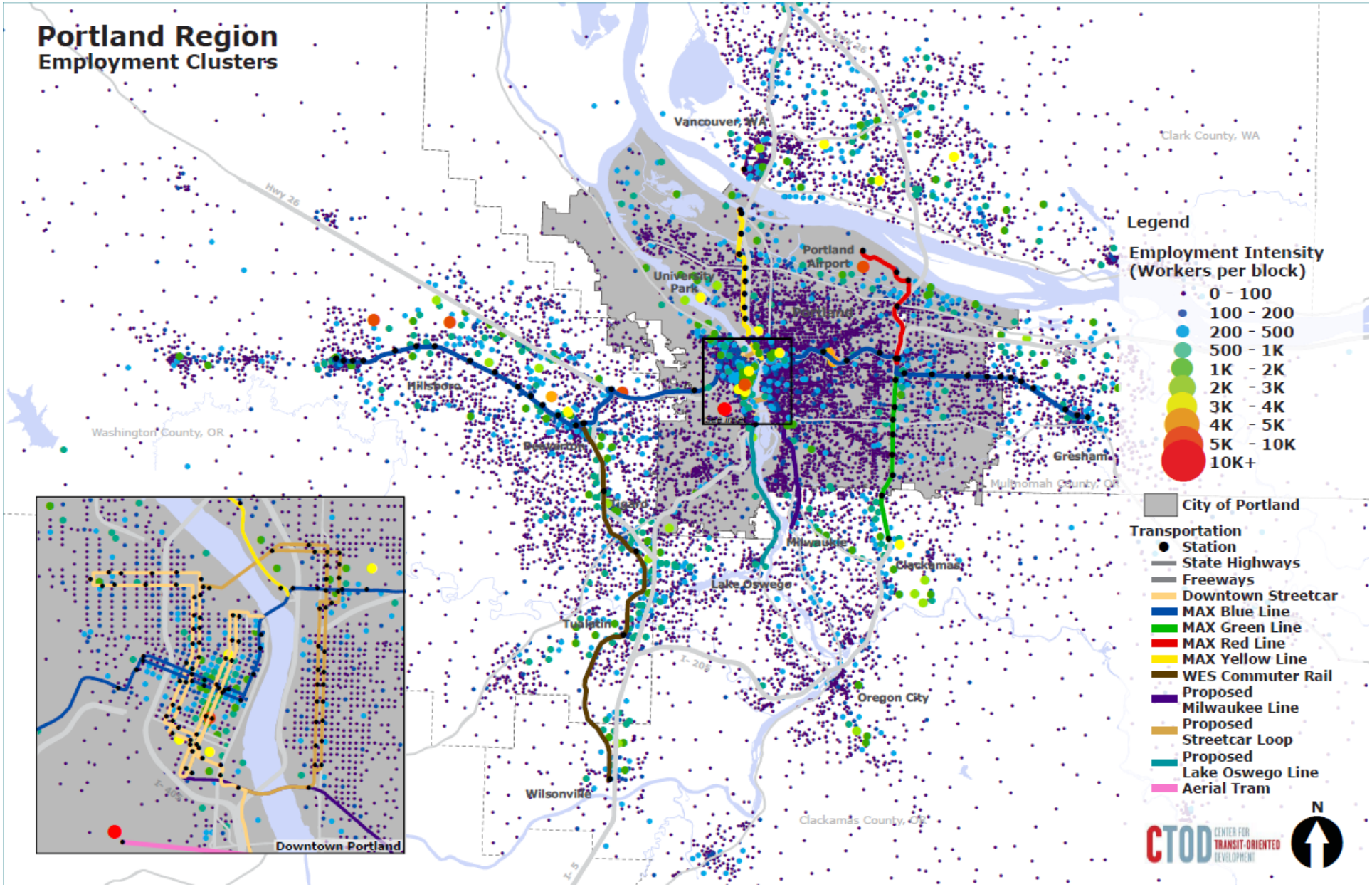
Portland


Portland Region
Employment Clusters
Vancouver, WA
Clark County, WA
Hwy 26
Portland Airport
University Park
Hillsboro
Washington County, OR
Beaverton
Tigard
Gresham
Multnomah County, OR
Milwaukie
Clackamas
Lake Oswego
Tualatin
I-205
Oregon City
Wilsonville
Clackamas County, OR
I-5
Downtown Portland
Legend
Employment Intensity
(Workers per block)
0 - 100
100 - 200
200 - 500
500 - 1K
1K - 2K
2K - 3K
3K - 4K
4K - 5K
5K - 10K
10K+
City of Portland
Transportation
Station
State Highways
Freeways
Downtown Streetcar
MAX Blue Line
MAX Green Line
MAX Red Line
MAX Yellow Line
WES Commuter Rail
Proposed Milwaukee Line
Proposed Streetcar Loop
Proposed Lake Oswego Line
Aerial Tram
N
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Travel Behavior and Workplace Districts: Investigation for Hacienda Business Park

Ellen Greenberg, AICP

ARUP

Travel Behavior and Workplace Districts
Final Jeopardy Answer

The formula for accommodate growth (i.e., significant increase in urban activity and movement) without a directly corresponding increase in trips, vmt and congestion

Transportation Performance and Workplace Districts

(1) Case studies:

Established City Employment Districts

Business Park Urbanism

(3) Research Review

(4) Review of Local data

(5) Synthesis

Travel Behavior and Workplace Districts
Final Jeopardy

What is: Concentrated mixed land uses + Rational decision-makers + very high network capacity + regional location and optimal transportation supply + authentic urban character + “self selectors”

The answer: The Formula for accommodate growth (i.e., significant increase in urban activity and movement) without a directly corresponding increase in trips, vmt and congestion

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Increase number of people who

take transit to park jobs

Considerations:

- Transit: availability at origin, quality of service
- Distance of commute trip
- Ability to accomplish daily errands during work day
- Relative cost and time of transit vs. auto trip
- Fit between workers with transit available at their trip origin, and jobs available at Hacienda

By drawing on these factors: concentrated mixed land uses + rational decision-makers + very high network capacity + optimal regional location and transportation supply + authentic urban character + self-selectors

Increase number of people who

both live and work in
park; don't drive to work

Considerations:

- Accommodating daily household routine, incl. school trips
- Match of jobs and workers: skills, #, $
- Distance between home and work
- Housing opportunities within the park
- Suitability and appeal of walk infrastructure

By drawing on these factors: concentrated mixed land uses + rational decision-makers + very high network capacity + optimal regional location and transportation supply + authentic urban character + self-selectors

Increase number of people who

live in park, don't drive

Considerations:

- Transit availability at destination
- Distance of commute trip
- Ability to accomplish daily errands during work day
- Relative cost and time of transit / walk/ bike vs. auto trip
- Ease of BART access from home location

By drawing on these factors: concentrated mixed land uses + rational decision-makers + very high network capacity + optimal regional location and transportation supply + authentic urban character + self-selectors

Increase number of people who

live <1 mile from HBP, work in Park, walk to work

Considerations:

- Ability to accomplish daily errands during work day
- Relative cost and time of walk vs. auto trip
- Travel needs of entire household
- Suitability and appeal of walk infrastructure

By drawing on these factors: concentrated mixed land uses + rational decision-makers + very high network capacity + optimal regional location and transportation supply + authentic urban character + self-selectors

Increase number of people who

live 1-5 miles from HBP, work in Park, bike to work

Considerations:

- Ability to accomplish daily errands during work day
- Relative cost and time of bike vs. auto trip
- Travel needs of entire household
- Suitability of road infrastructure for bicycle trips

By drawing on these factors: concentrated mixed land uses + rational decision-makers + very high network capacity + optimal regional location and transportation supply + authentic urban character + self-selectors

Linking Desired Travel Behavior and Strategic Actions

- A composite view links desired travel behavior to a full program of strategic actions
- Disaggregated views show strategies associated with individual travel behaviors

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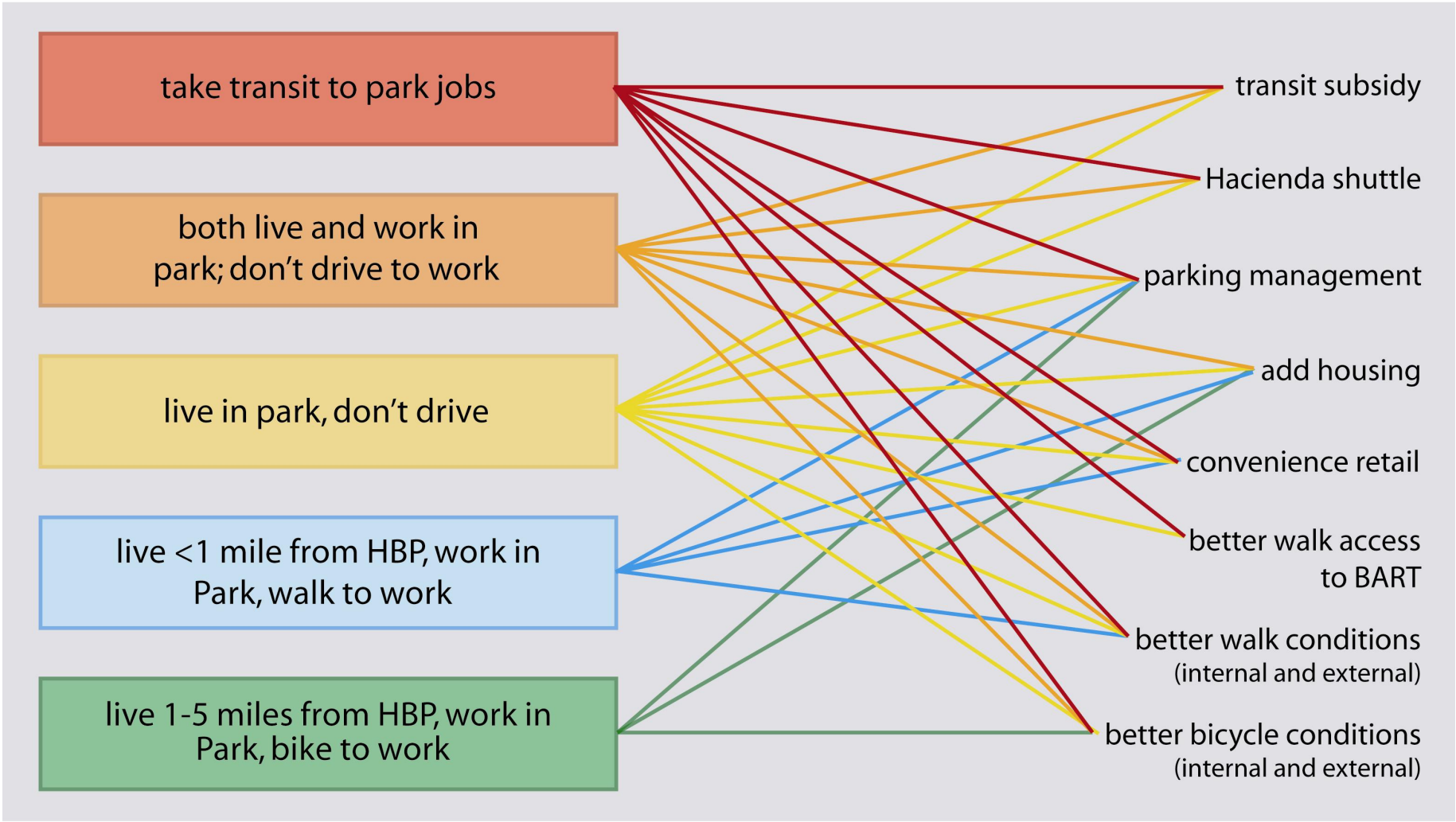
Increase number of people who

By pursuing the following strategies



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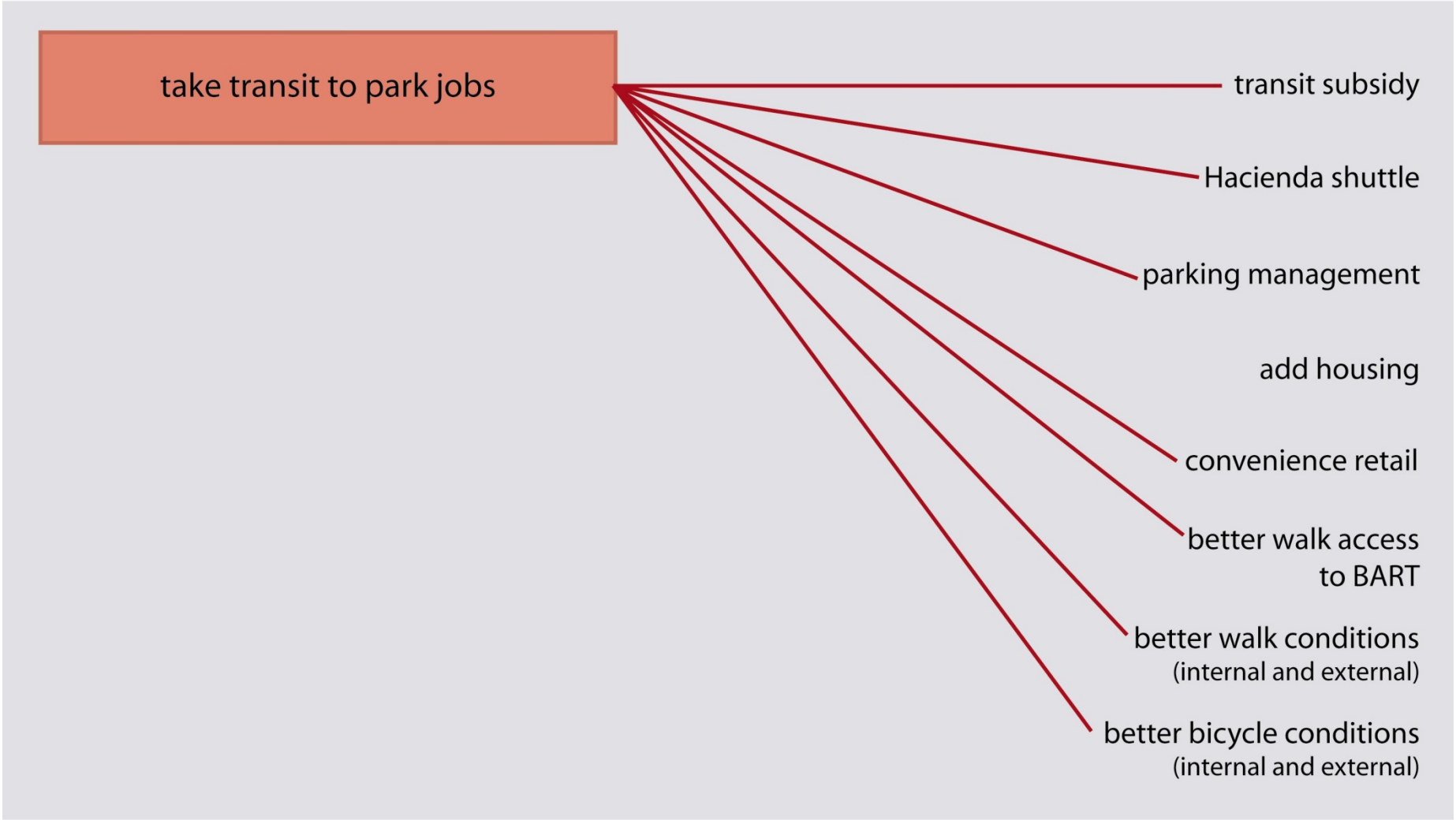

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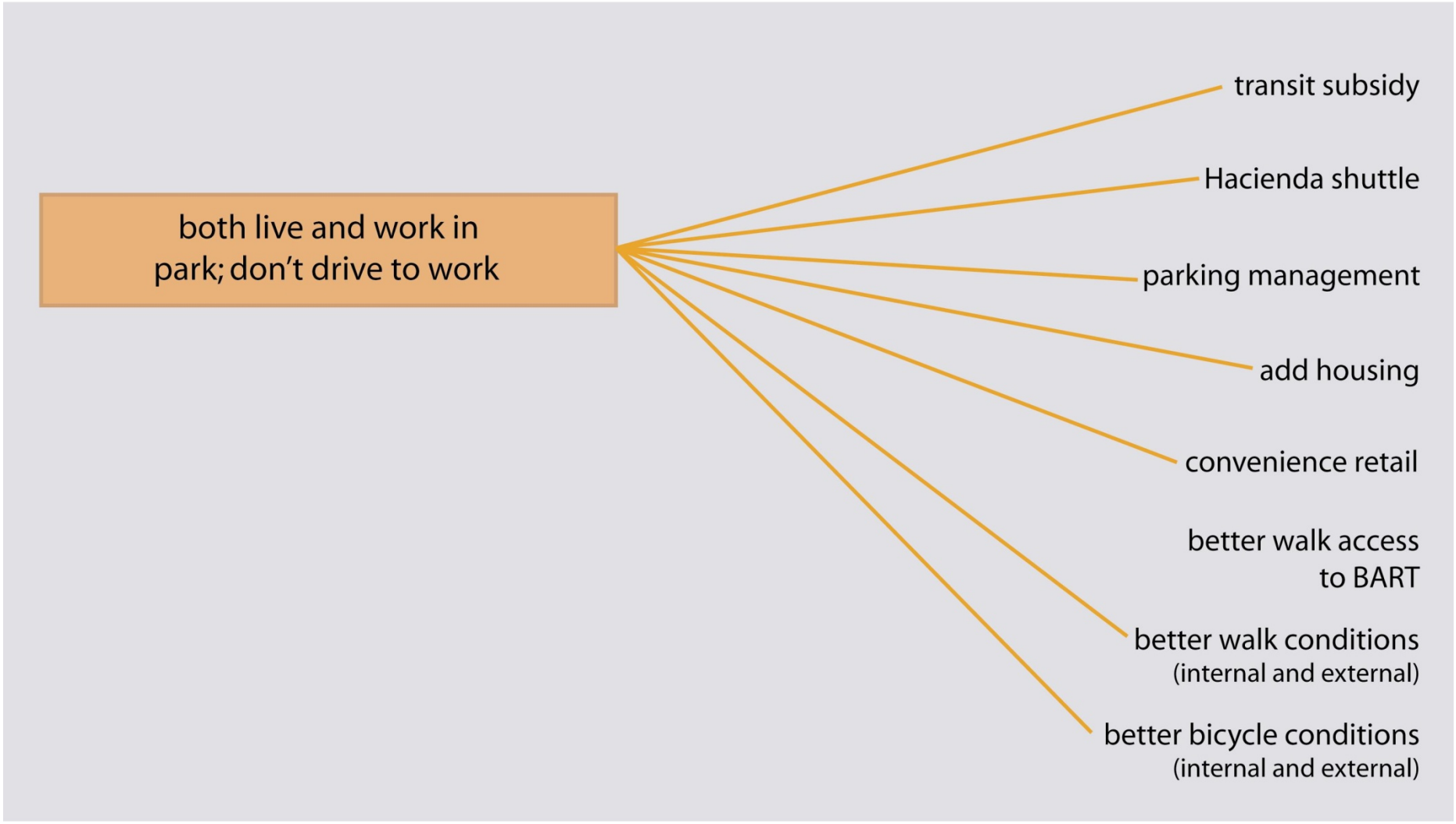

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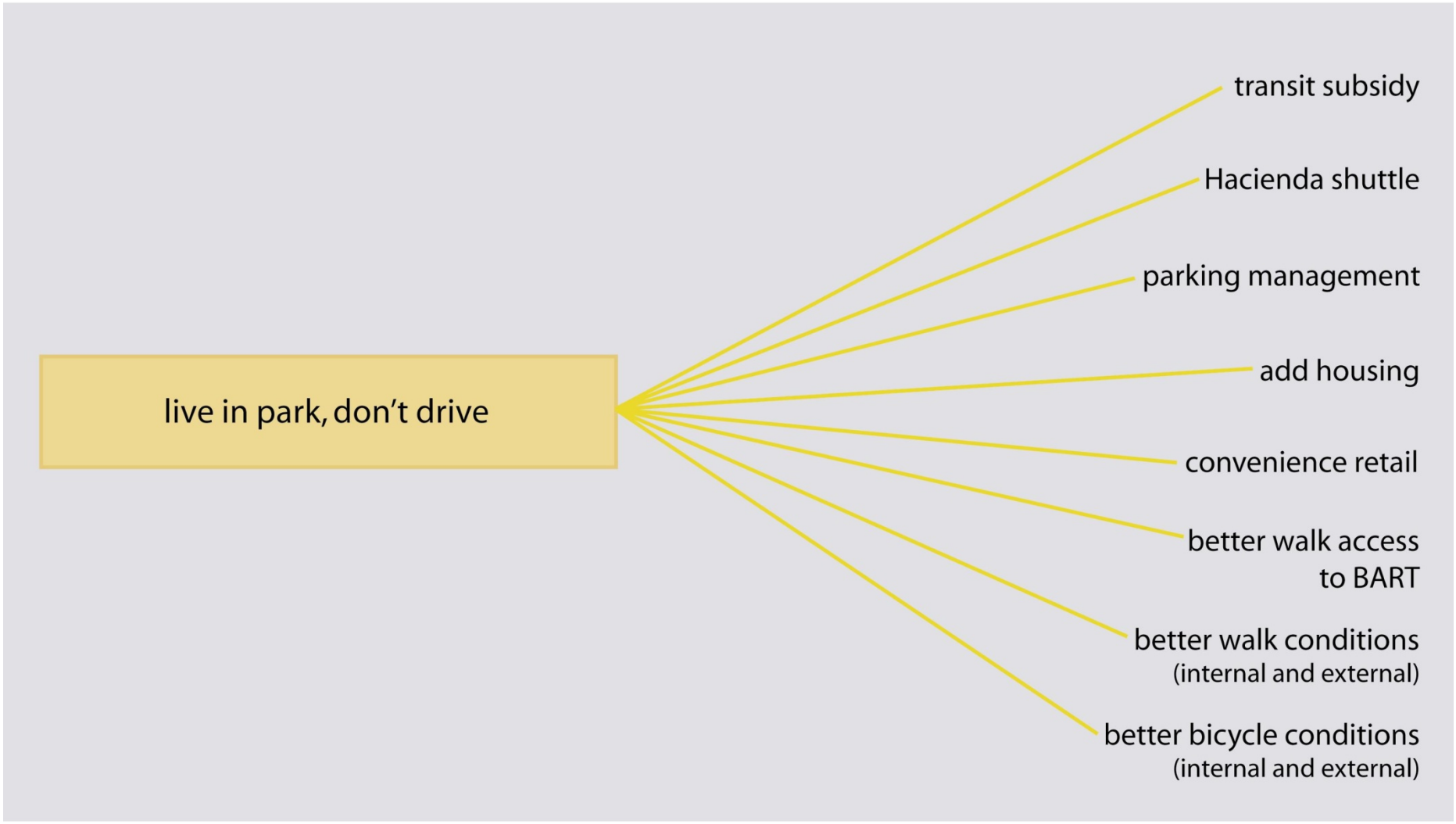

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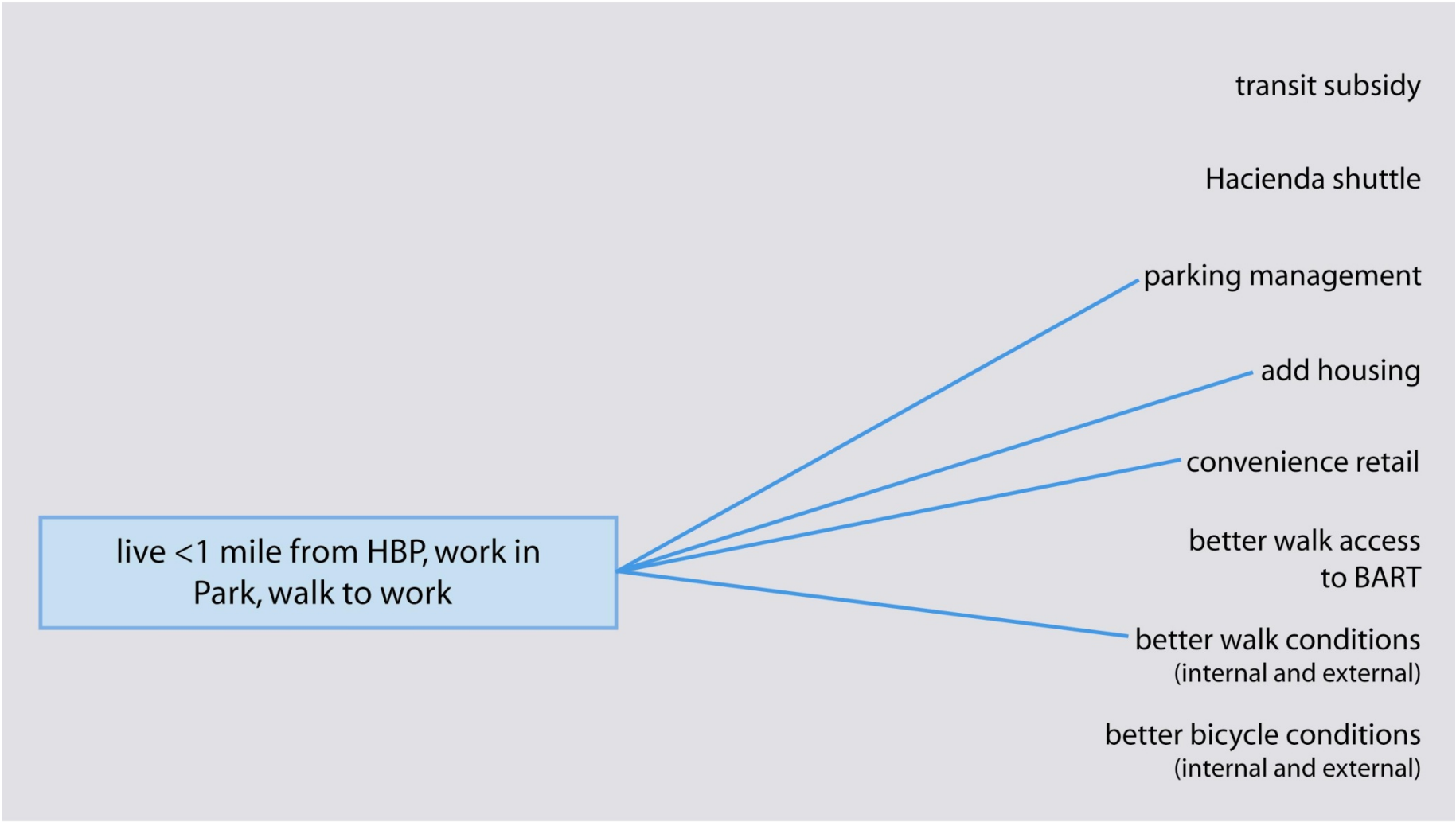
Increase number of people who

By pursuing the following strategies



By drawing on these factors: concentrated mixed land uses + rational decision-makers + very high network capacity + optimal regional location and transportation supply + authentic urban character + self-selectors

Increase number of people who

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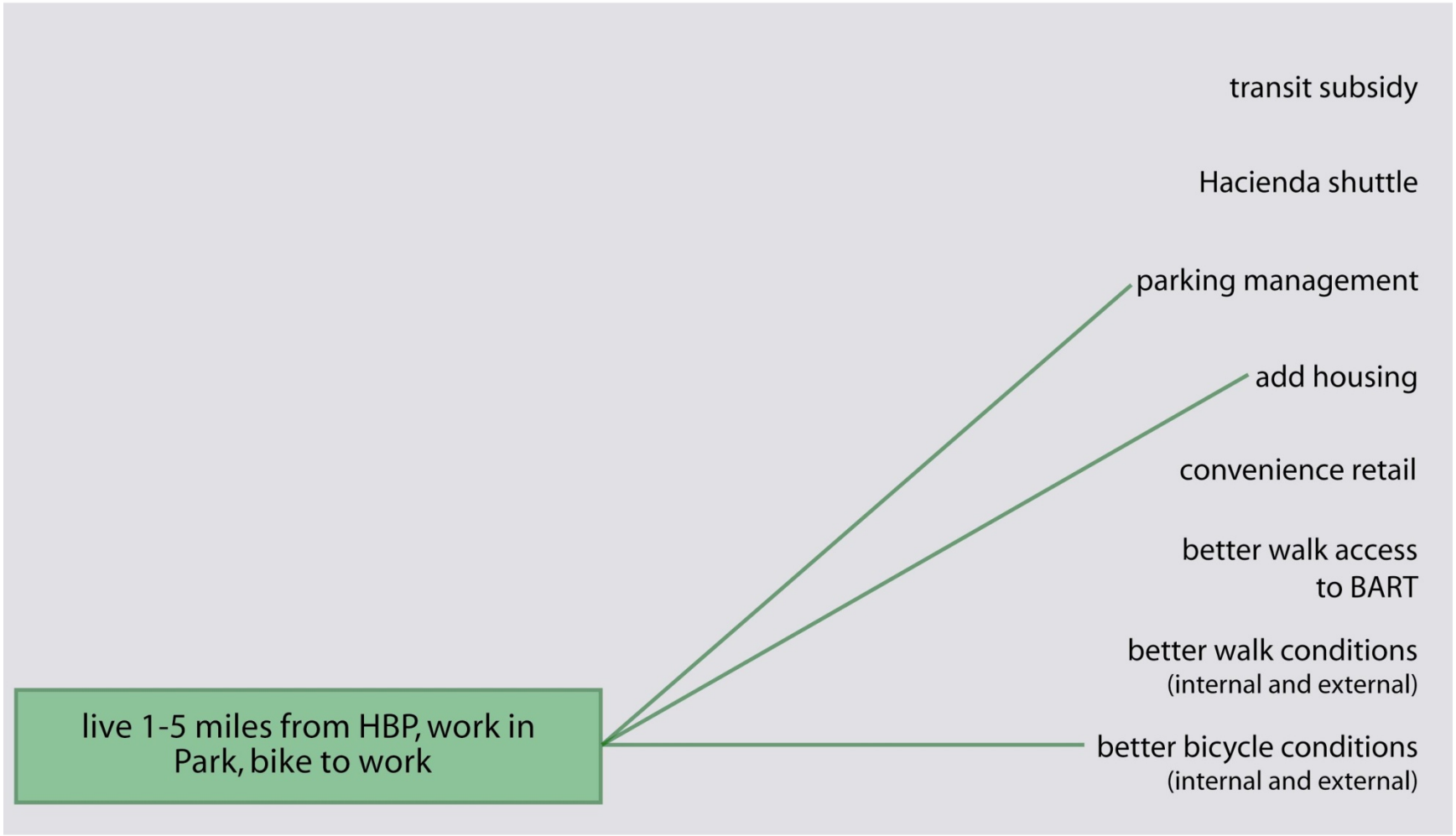

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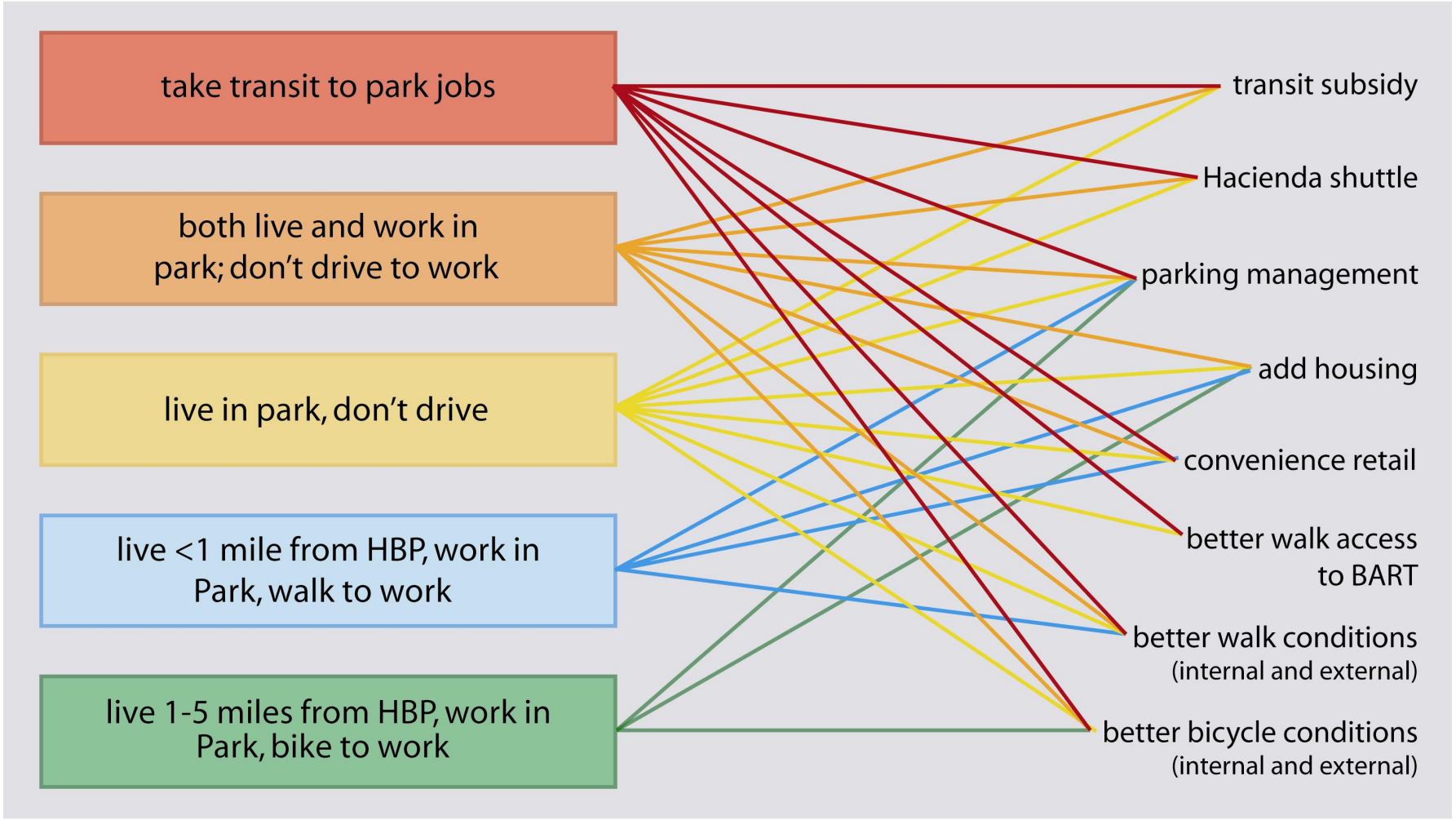

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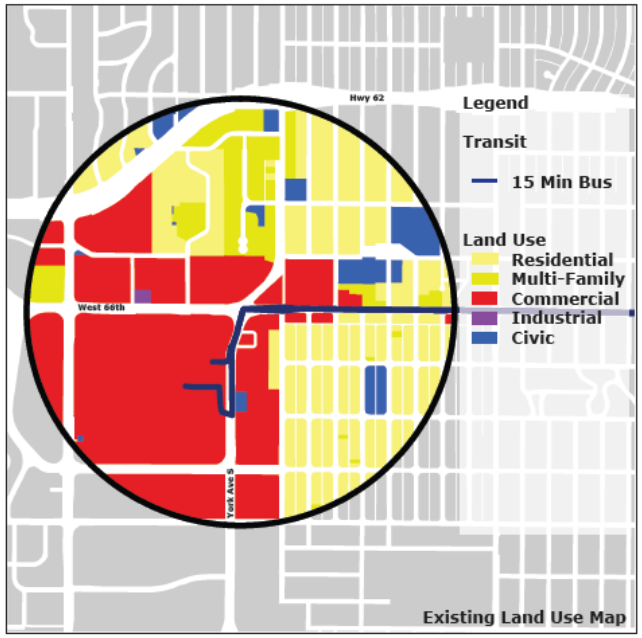
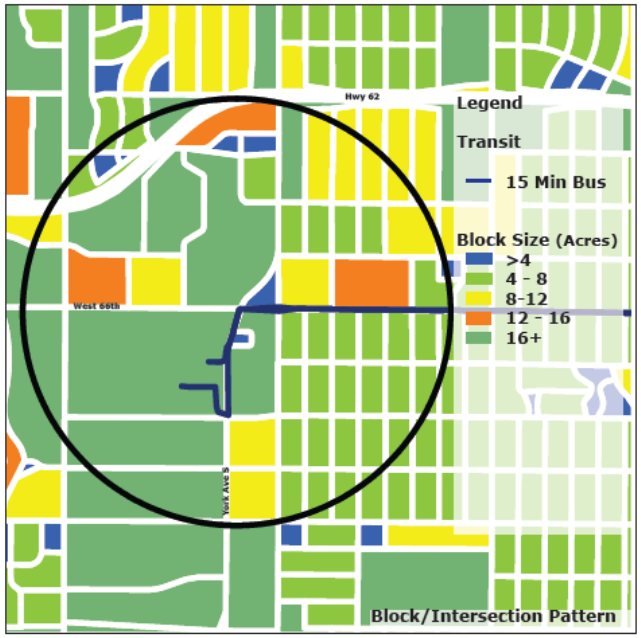
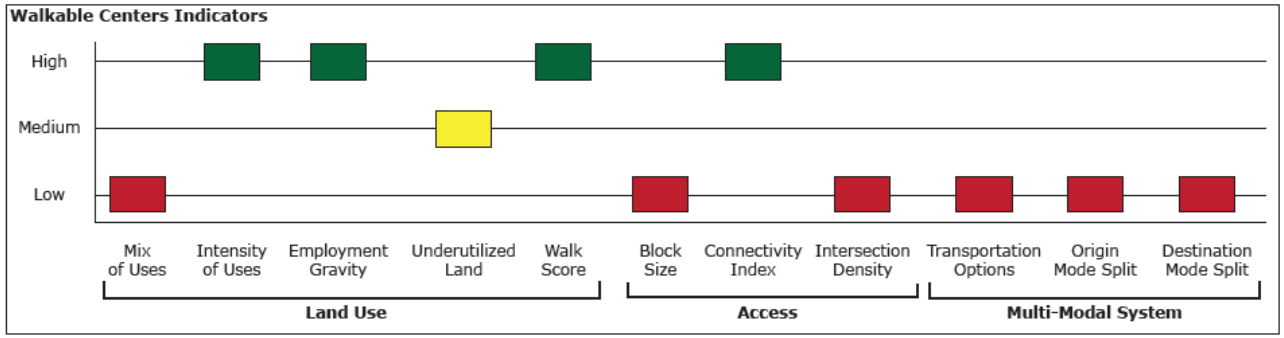
Fixing Suburban Job Centers

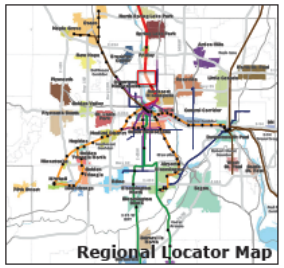






Twin Cities Region Walkable Centers Analysis

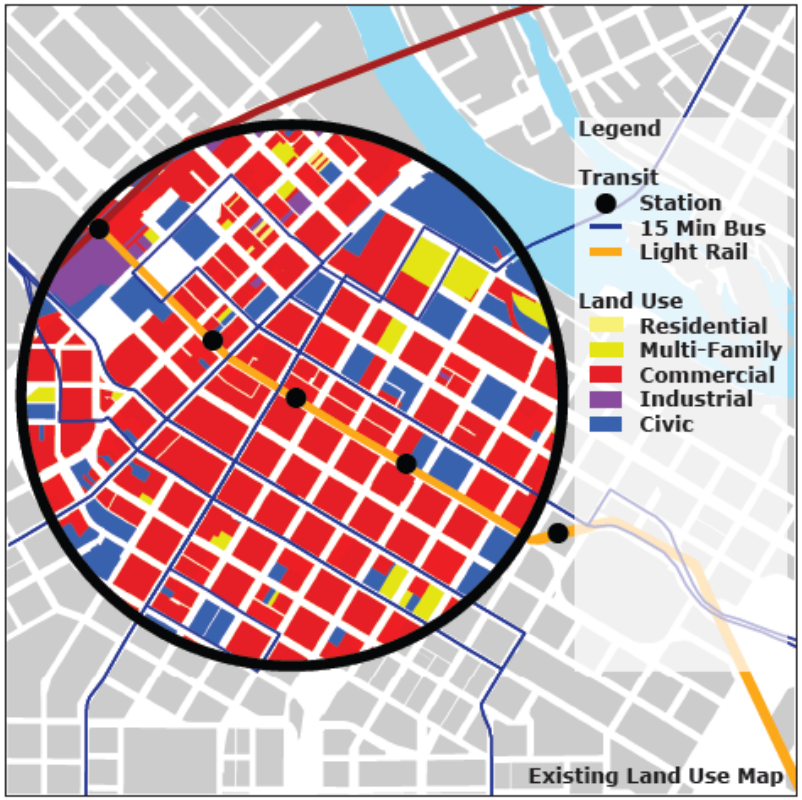
Southdale Area
(W 66th Street @ York Ave S, Edina)

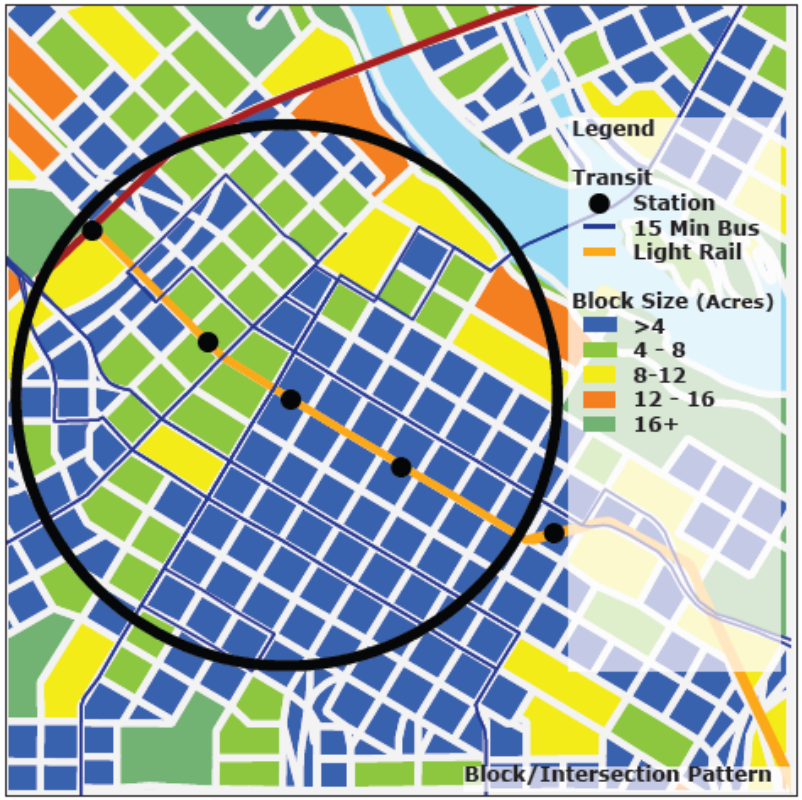


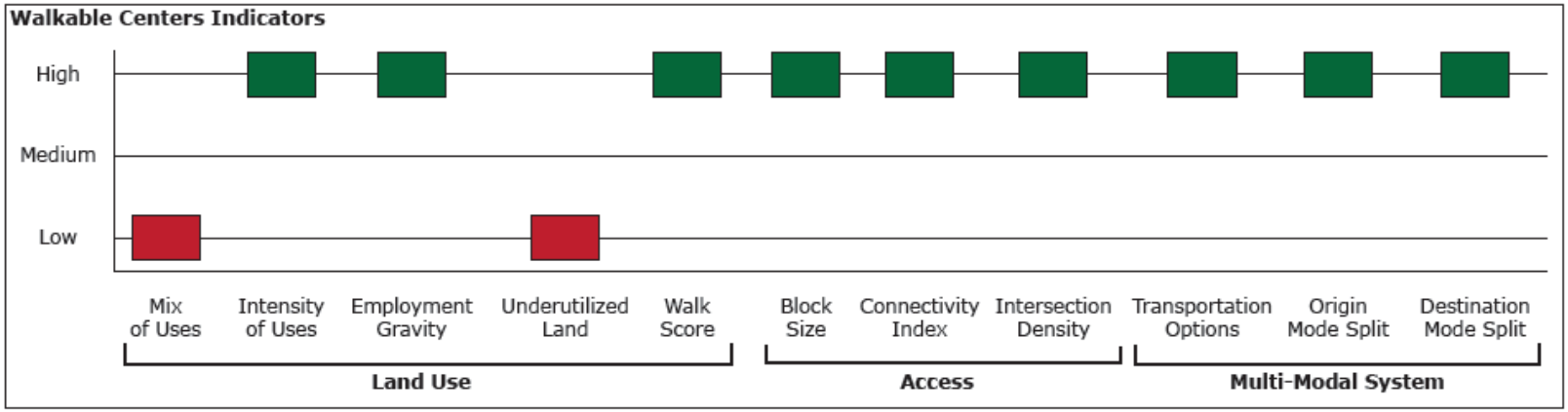
Indicator	
Mix of Uses (Workers/Residents)	6.02
Intensity of Uses (Work. + Res./Acre)	46.4
Employment Gravity	High
Underutilized Land	116 Acres
Walk Score	92
Average Block Size	10.02 Acres
Connectivity Index	1.84
Intersection Density	40/sq mi
Origin Mode Split	9% Non-auto
Destination Mode Split	4% Non-auto

CTOD CENTER FOR TRANSIT-ORIENTED DEVELOPMENT

May 4, 2009


Legend
Transit
Station
15 Min Bus
Light Rail
Land Use
Residential
Multi-Family
Commercial
Industrial
Civic
Existing Land Use Map

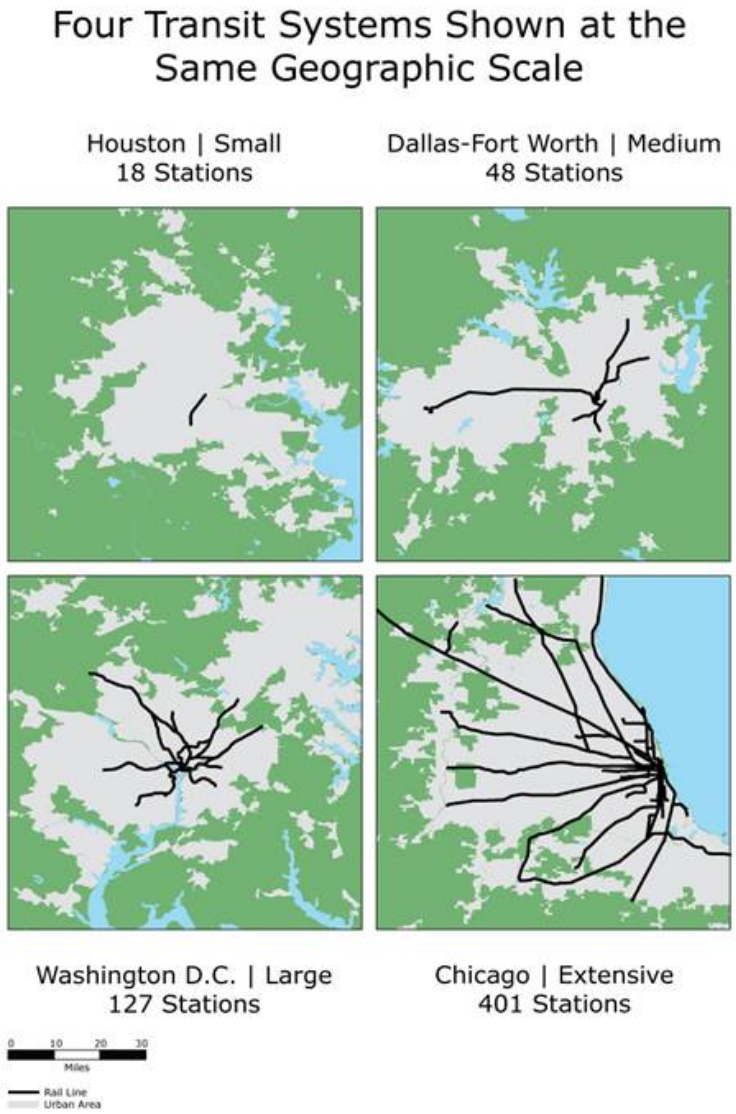

Legend
Transit
Station
15 Min Bus
Light Rail
Block Size (Acres)
>4
4 - 8
8-12
12 - 16
16+
Block/Intersection Pattern


Walkable Centers Indicators
High
Medium
Low
Mix of Uses
Intensity of Uses
Employment Gravity
Underutilized Land
Walk Score
Block Size
Connectivity Index
Intersection Density
Transportation Options
Origin Mode Split
Destination Mode Split
Land Use
Access
Multi-Modal System

There are 30(ish) Transit Regions In the U.S., With More to Come

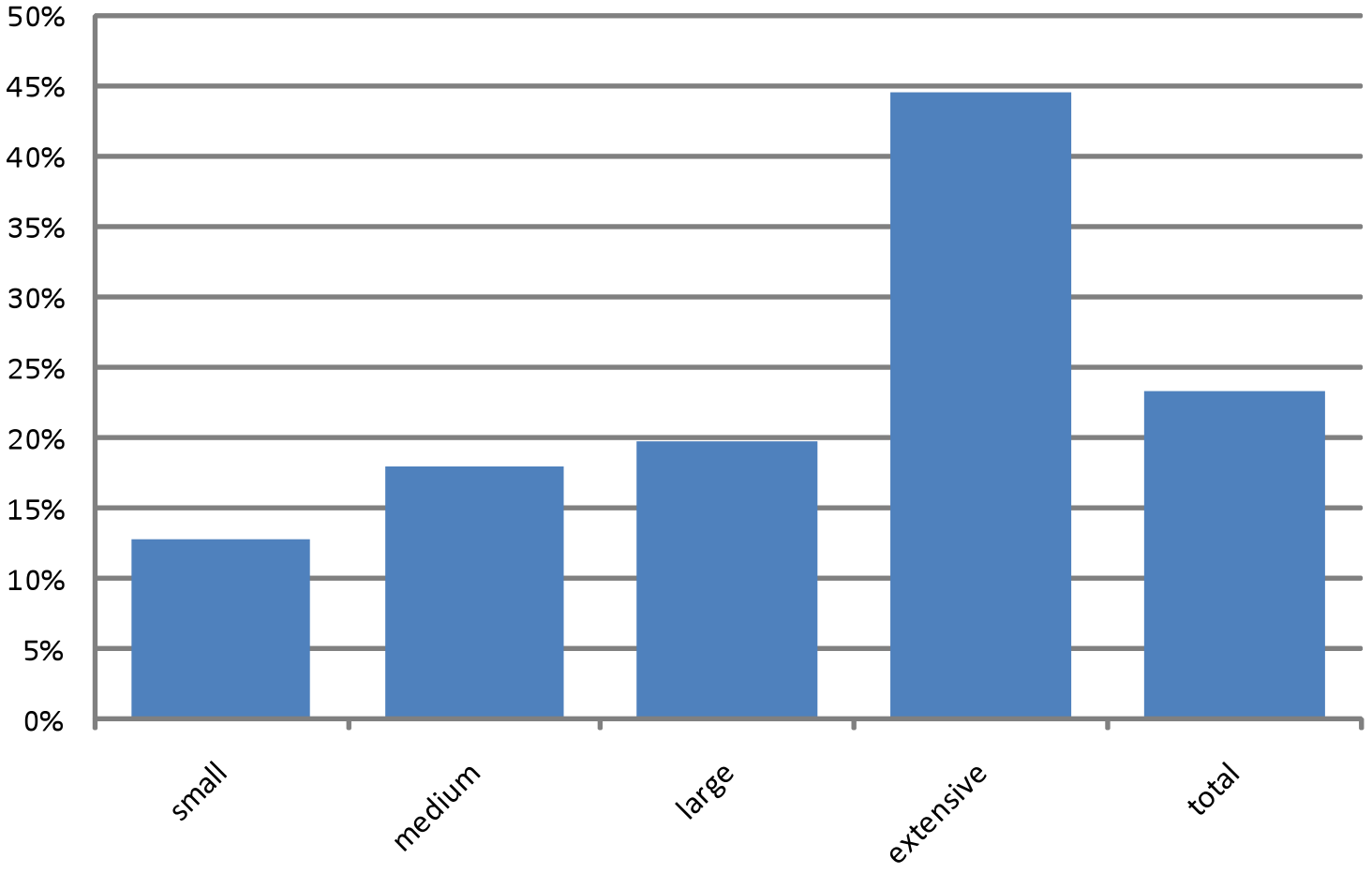
Transit System Size Matters

System Size Classifications	
Extensive Systems	201 or more stations
Large Systems	70 – 200 stations
Medium Systems	25 to 69 stations
Small Systems	1 to 24 stations



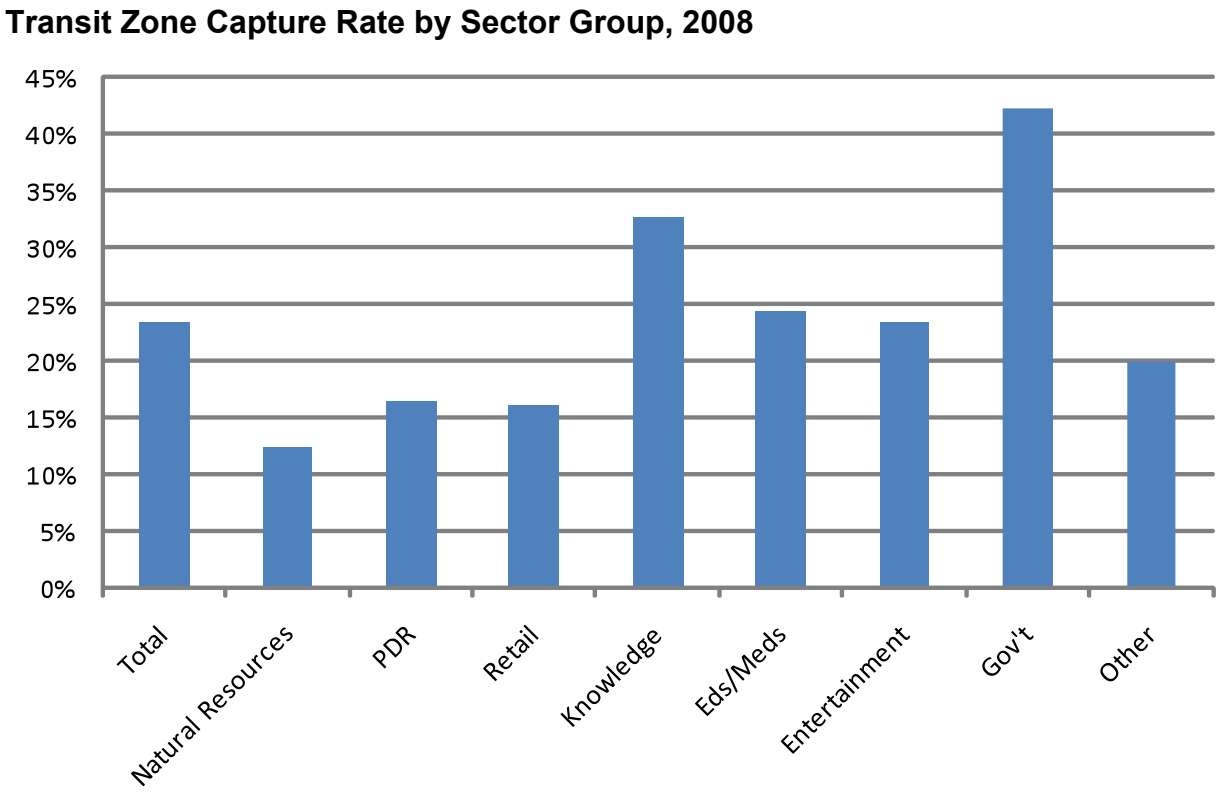
CTOD CENTER FOR TRANSIT-ORIENTED DEVELOPMENT

On Average, About 25 Percent of all Jobs in Transit Regions are Located Near Transit, but Varies by System Size



CTOD TRANSIT-ORIENTED DEVELOPMENT

Different Sectors Have A Varying Propensity to Cluster Near Transit



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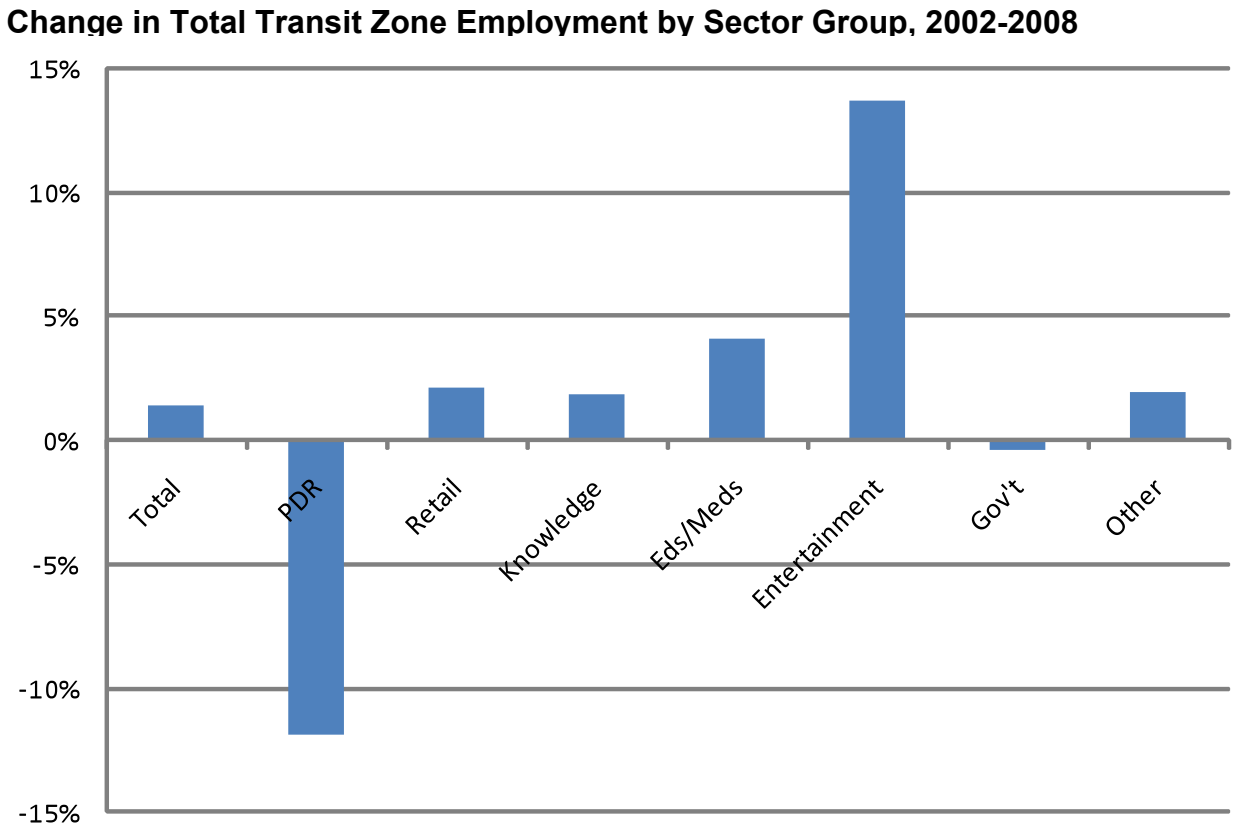
Employment in these Transit Zones Has Increased 2002-2008



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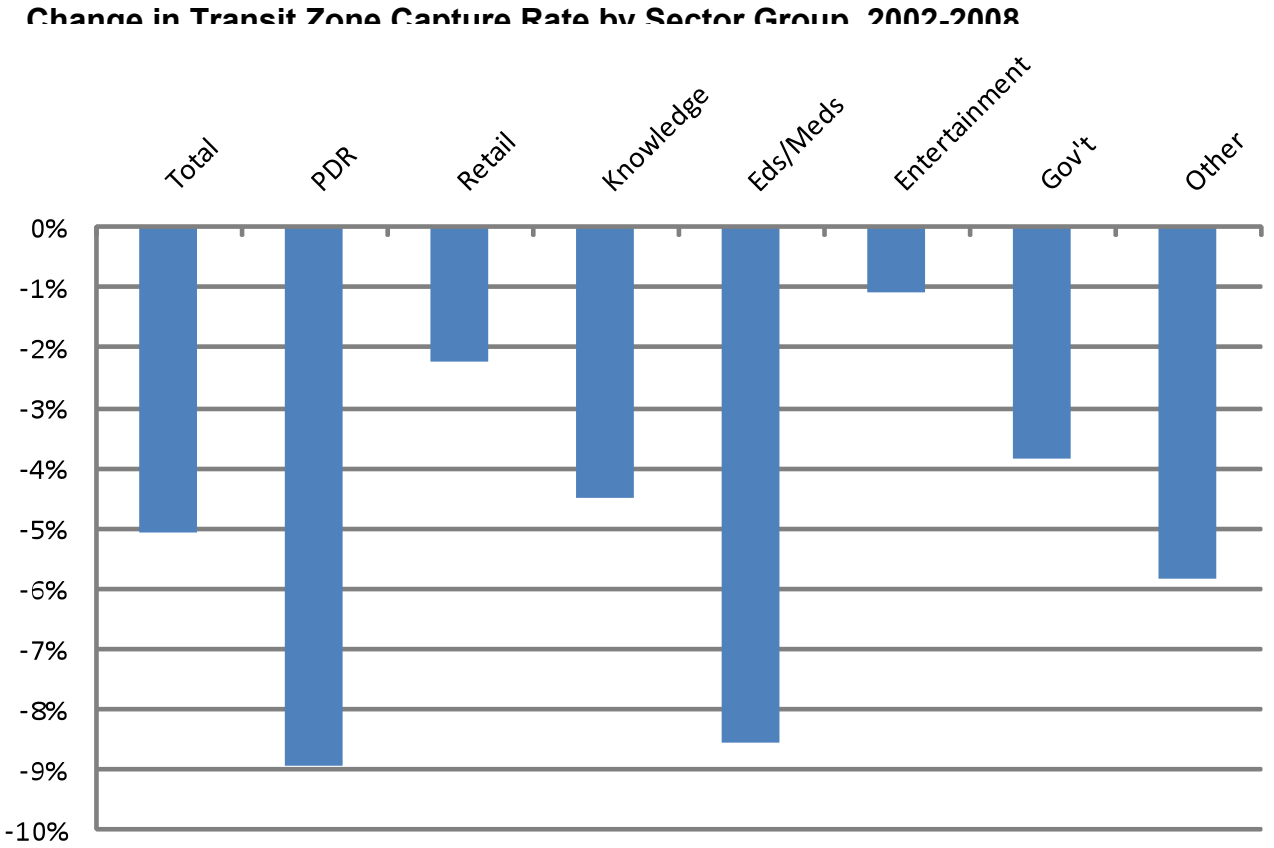
Although, As A Share of Total Jobs, Transit Zones Have "Lost Ground"

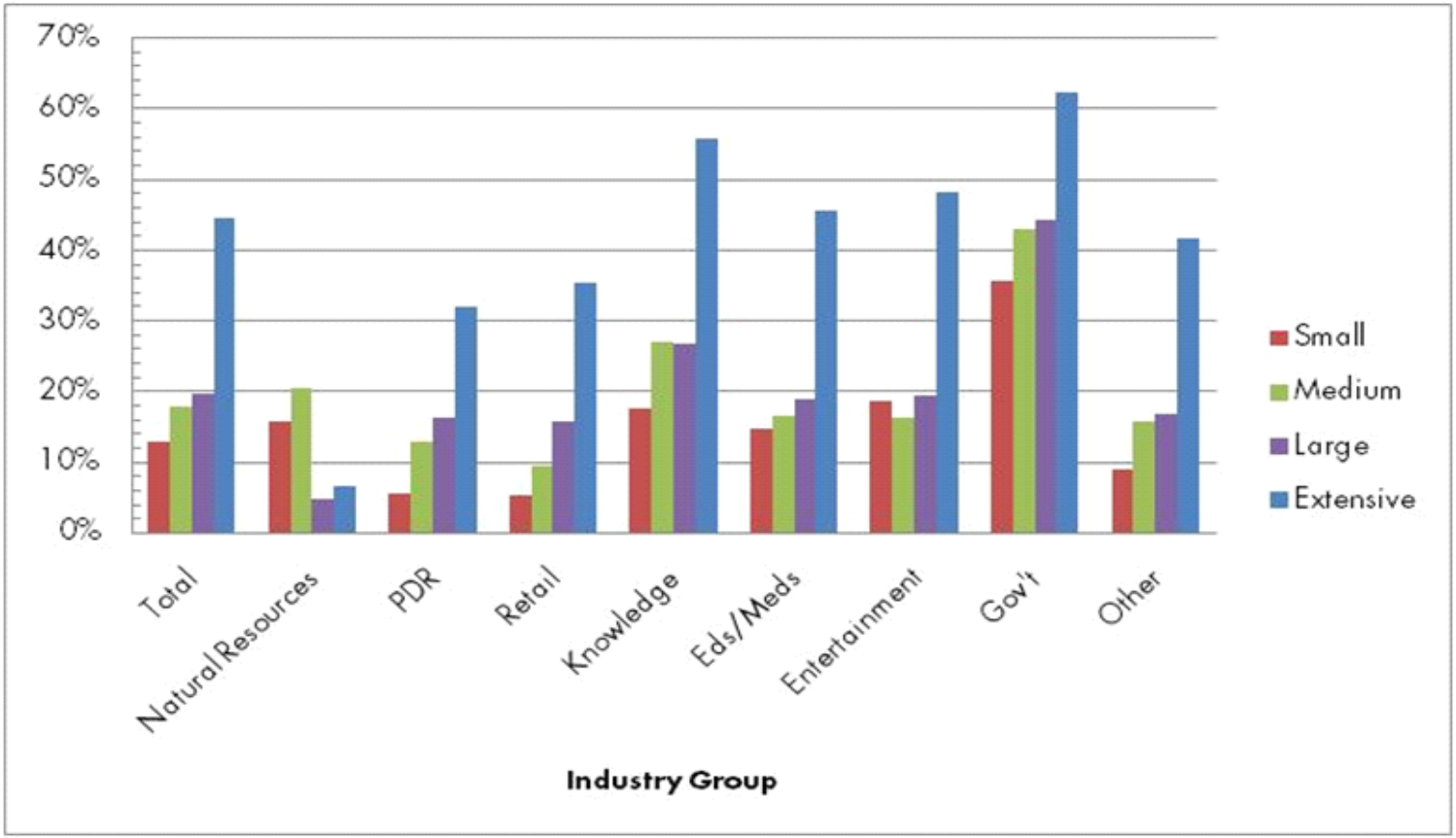


Source: LEHD 2008, Center for Transit Oriented Development 2010

CTOD CENTER FOR TRANSIT-ORIENTED DEVELOPMENT

But system size is a critical factor driving the share of employment located near transit

Transit Zone Capture Rate by Sector Group and System Size, 2008



Source: LEHD 2008, Center for Transit Oriented Development 2010

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Employment and TOD

SPUR

September 16, 2010

Dena Belzer – Strategic Economics
Ellen Greenberg - SPUR
Jeff Wood – Reconnecting America