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Webinar: Findings From 15 Years Of Travel Surveys At Portland Area Transit-oriented Developments (TODs)

Jennifer Dill

Portland State University, jdill@pdx.edu

Nathan McNeil

Portland State University, nmcneil@pdx.edu

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Findings from 15 Years of Travel Surveys at Portland area Transit-oriented Developments

Jennifer Dill, PhD. and Nathan McNeil



Agenda

- Defining TODs
- TODs in Portland
- PSU Surveys
- Findings: Who lives in TODs?
- Findings: How do TOD residents travel?
- “Revisiting TODs” – Change over time



What is a Transit-Oriented Development?

Pedestrian-friendly, mixed-use developments within walking distance of a rail transit station and a core commercial area (Calthorpe *The Next American Metropolis* 1993)

Broad concept that includes any development that benefits from its proximity to a transit facility and that generates significant transit ridership. (MARTA, Atlanta)

Projects near transit stops that: reduce automobile dependence; encourage high shares of pedestrian and bicycle access trips to transit; help to foster safe station environments; enhance physical connections to transit stations from surrounding areas; and provide a vibrant mix of land-use activities. (WMATA, DC)



TODs in the Portland region



Orenco Station



Beaverton Round



Metro TOD Program

The screenshot shows the Metro website's page for the Transit-Oriented Development Program. The page features a navigation bar with links for Parks + Venues, Tools + Services, What's Happening, and About Metro. A search icon is located in the top right corner. The main content area is titled "Transit-Oriented Development Program" and includes a sub-header: "Metro's Transit-Oriented Development Program strategically invests to help more people live, work and shop in neighborhoods served by high-quality transit." Below this, there are tabs for "Overview" and "Projects by year". A large photograph of a modern, multi-story building with a glass facade and orange accents is displayed. To the left of the main content is a sidebar menu titled "GRANTS AND RESOURCES" with various categories like "Nature grants", "Parks and Nature community partnerships", "Community enhancement grants", etc. Below the photograph, there is a text block stating "Metro also acquires and owns properties in transit-served areas and solicits proposals from qualified developers to create transit-oriented communities in these places." and a "Learn more" link. At the bottom, there is a section titled "Who is eligible?" with the text "If you are a developer interested in partnering with".

“Metro’s Transit-Oriented Development Program strategically invests to help more people live, work and shop in neighborhoods served by high-quality transit.”



PSU Surveys

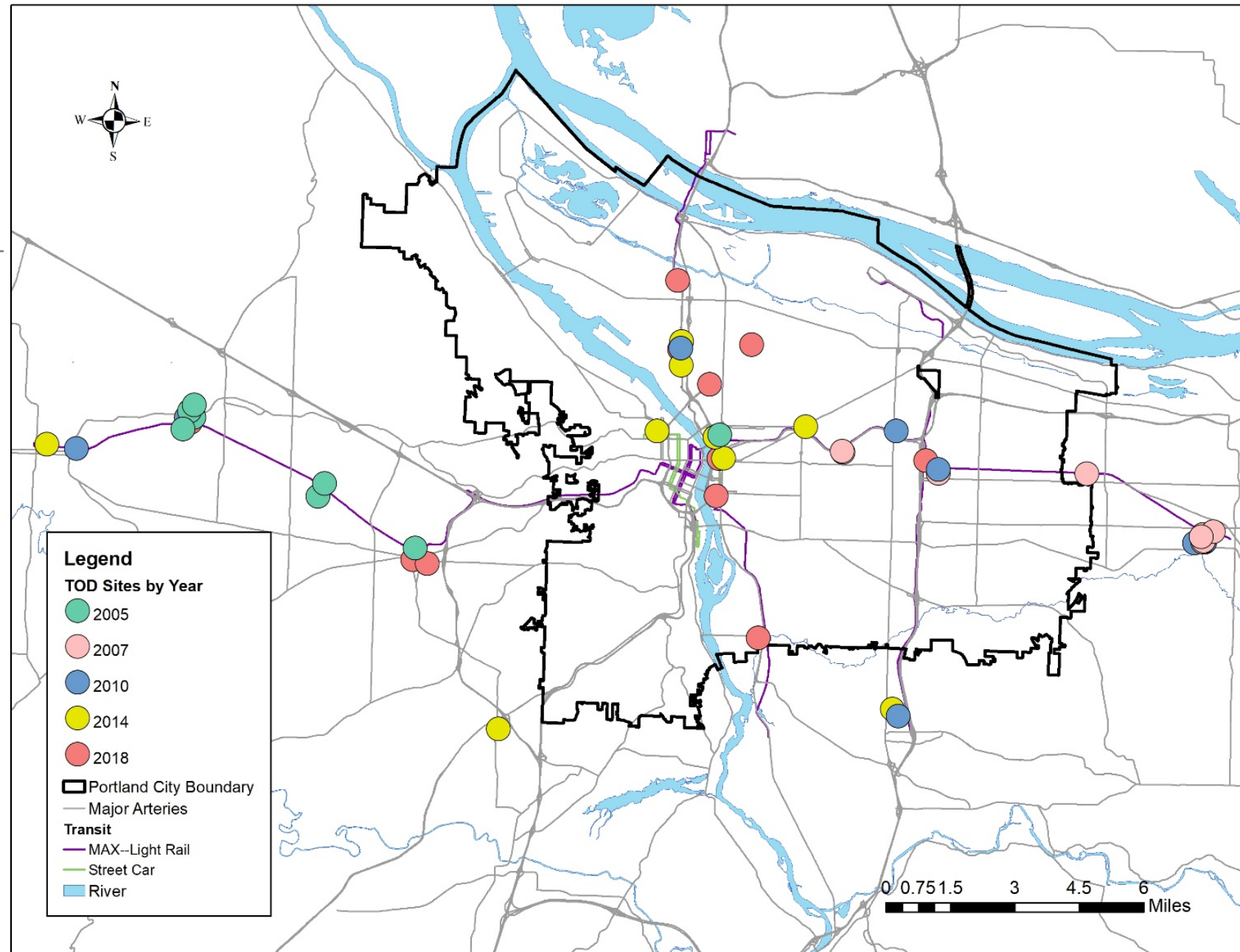
2005

2007

2010

2014

2018



Houses and Townhomes

Single-family, Small Lot



Orenco Station single family housing
(SFH, duplexes, triplexes)

1.5 to 2 Story Town Homes



Landmark, Gresham



2- to 3-Story Townhomes



Center Commons, Portland



Oneonta, Gresham



3 to 4-story Apartment/Condo Buildings (some with ground floor retail)



Nexus, Hillsboro (Orengo)



Central Point, Gresham



5+ story Apartment Buildings, many with ground floor retail



Slate, Portland



Hub 9, Hillsboro (Orenco)



Typical Methodology

- Survey packets sent via USPS or hand-delivered to doors.
- Generally all occupied units in selected TODs
- Worked with building managers
- 2 full mailings plus a reminder postcard
- Paper surveys with pre-paid return envelope
plus online option 2014-current
- Incentives offered - ~\$5 gift card (e.g. Starbucks) and/or raffle



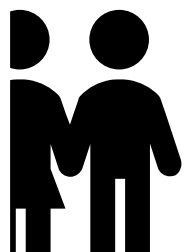
TOD Types

- High or low density:
 - Jobs
 - Population
- Transit Access and Walkability
 - Intersection density
 - Measure of transit access (# of transit trips; jobs accessible by transit within 30 minutes)
 - Distance to Station

| TOD type | High Transit Access | Low Transit Access |
|--------------|---------------------------------------|--------------------------------------|
| High Density | High Transp. High Density (n=9) | Low Transp. High Density (n=3) |
| Low Density | High Transp. Low Density (n=11) | Low Transp. Low Density (n=20) |



Who lives in the TODs?



1.7 persons per household
45% in 1-person households
44% in 2-person households
Only 10% have a child under 16

21% were 65 or older,
but only 6-9% in TODs not limited to older adults
42% are under 20-34 years old

21% are people of color (non-white and/or Hispanic)



19% have household incomes < \$25k
Median income: \$50-75k



61% have a 4-yr college degree

Surrounding cities:

7-36% in 1-person households
26-34% in 2-person households
23-56% have a child under 18

10-15% are 65+

20-37% age 20-34

17-28% not one-race, white

4-25% have household incomes under \$25k
Median income: \$50-63k

18-46% have a 4-yr college degree (of age 25+)



How do TOD residents travel?

Vehicle ownership

Commuting

Non-commute trips

Trip generation

Changes in mode use since moving to TOD

Role of housing preferences and attitudes

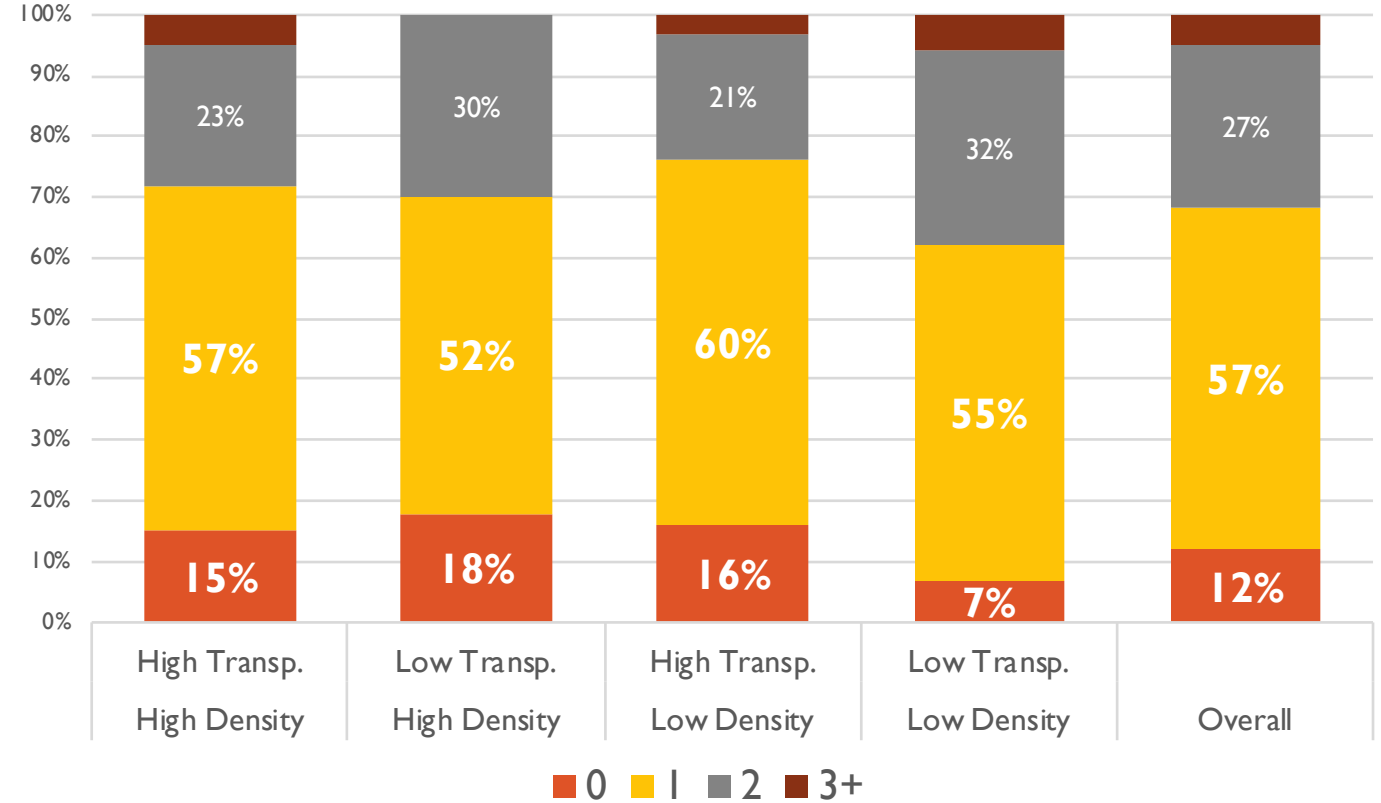


Low vehicle ownership

60-75% of the respondents are in a household with zero or one motor vehicle

In the surrounding cities, 22% of the 1- and 2-person households have zero or one motor vehicle.

36% of TOD residents live in a household with fewer vehicles than people of driving age (16+)

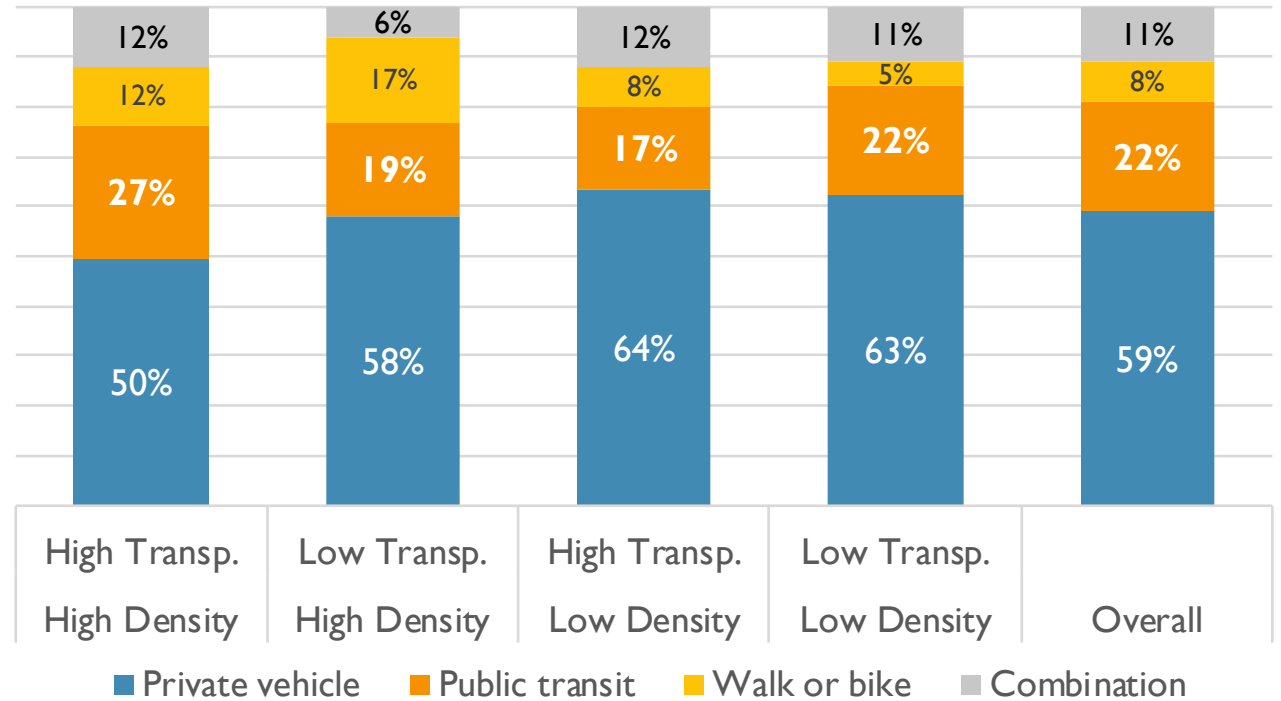


High levels of transit use for commuting

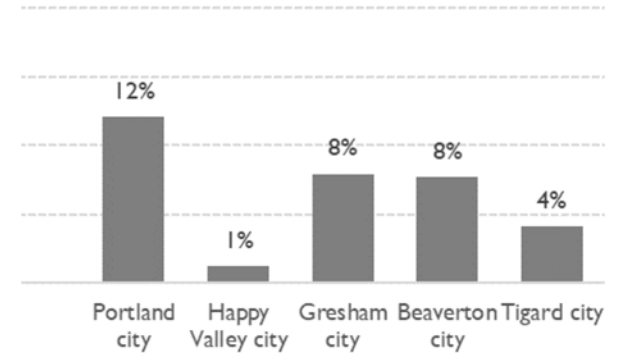
17-27% of the TOD residents commute to work or school primarily by transit.

1-12% of workers in the surrounding cities commute mainly by transit.

10% of TOD residents switched from commuting primarily by private vehicle to transit since moving to the TOD.



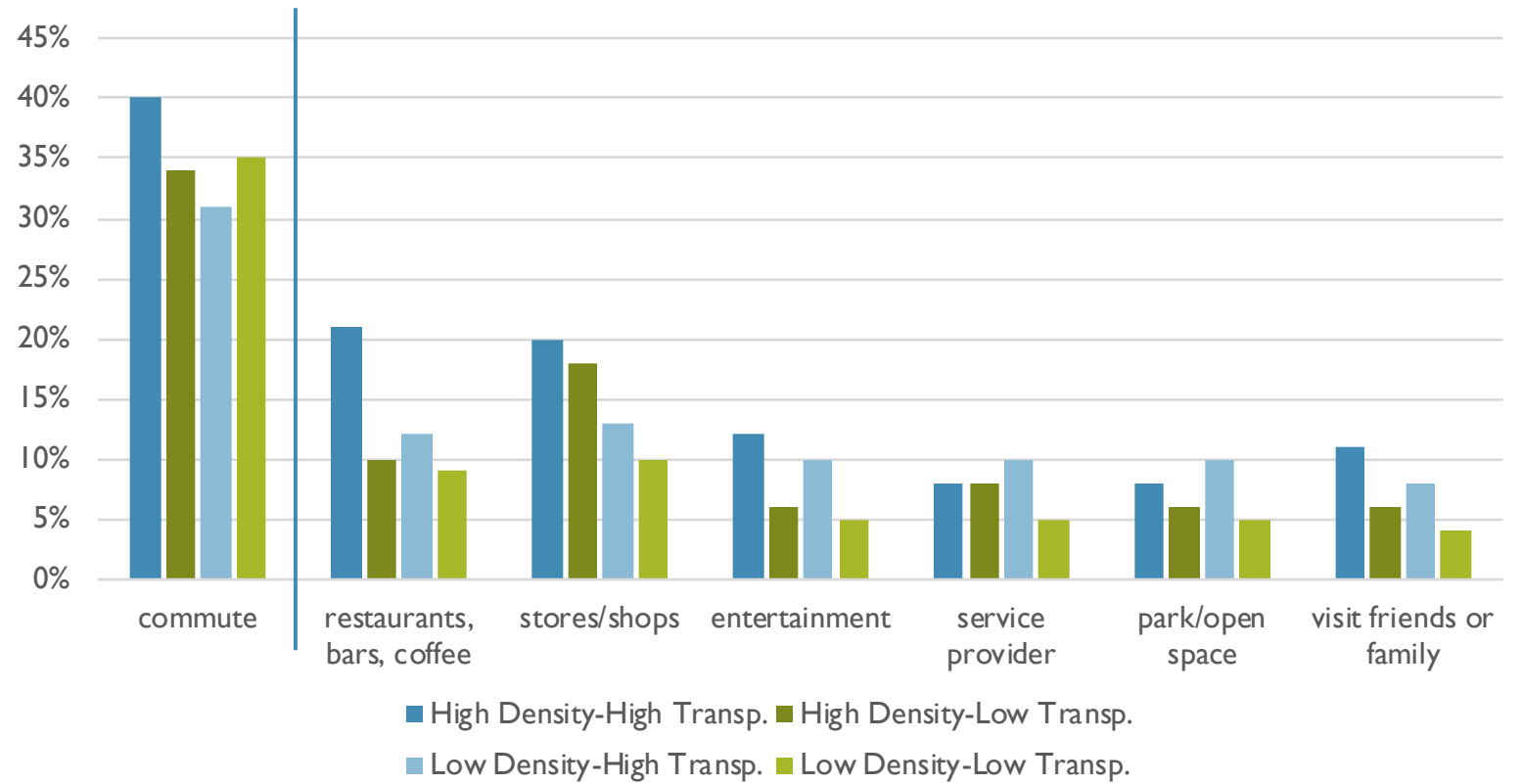
**Surrounding cities:
% of workers
commuting by transit**
2011 5-year ACS data



Lower rates of transit use for non-commute trips

Some differences based on TOD type: rates of High-High TOD residents sometimes higher than Low density TOD residents.

% using transit once a week or more for this trip purpose

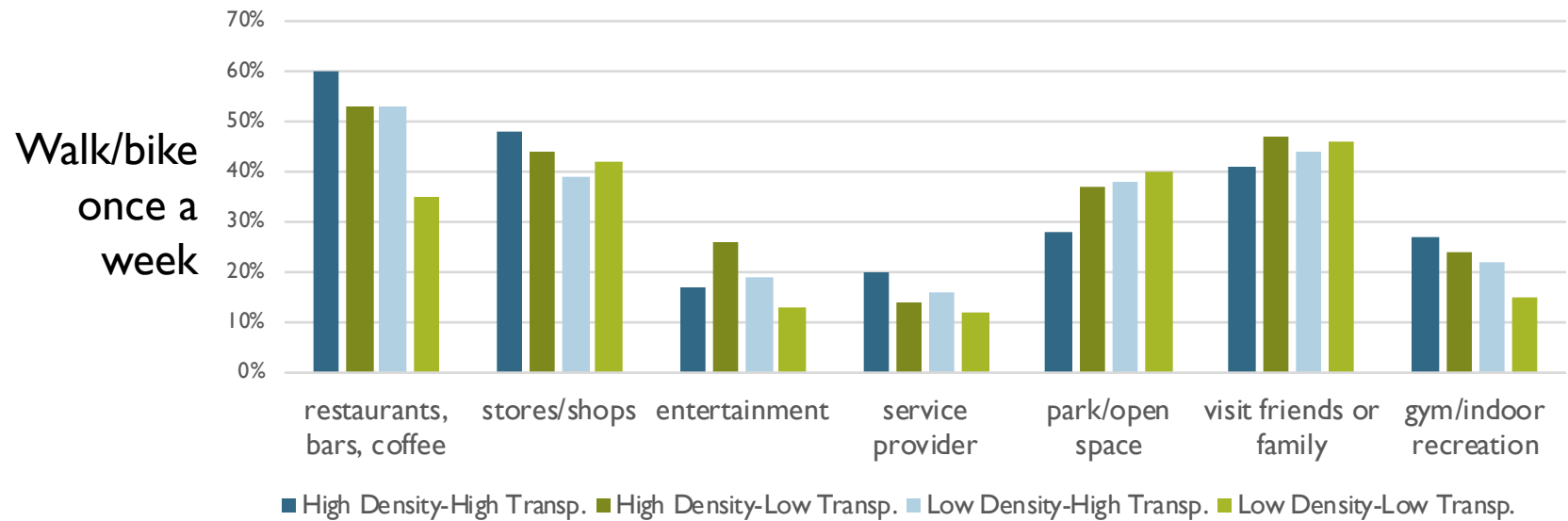
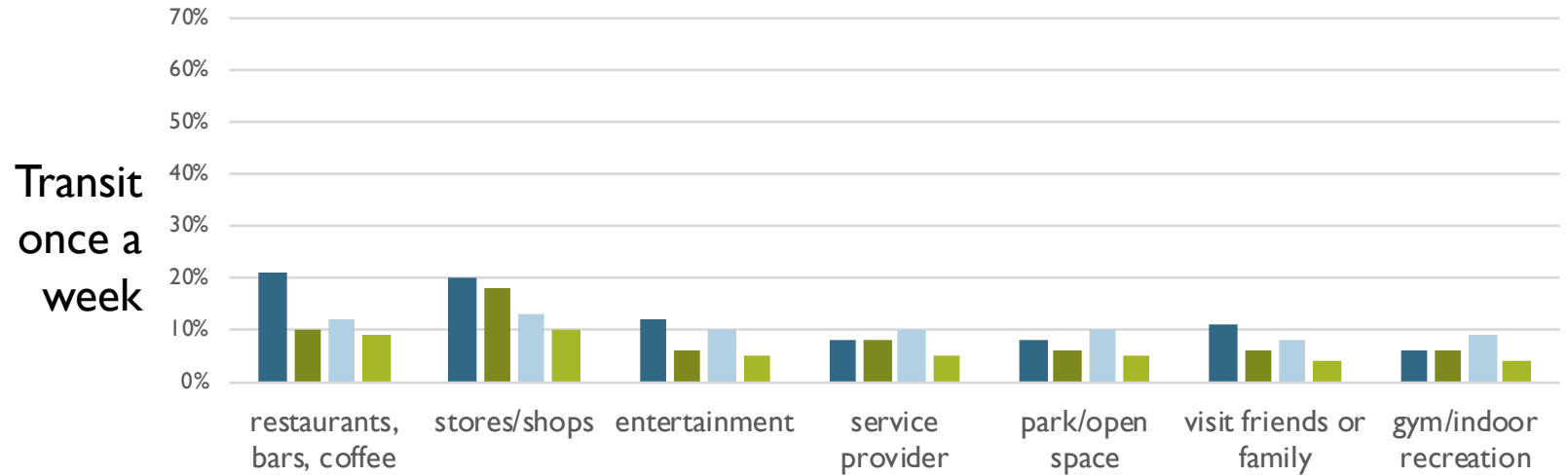


TOD residents are walking/biking to destinations

Differences between TOD types reveal different patterns.

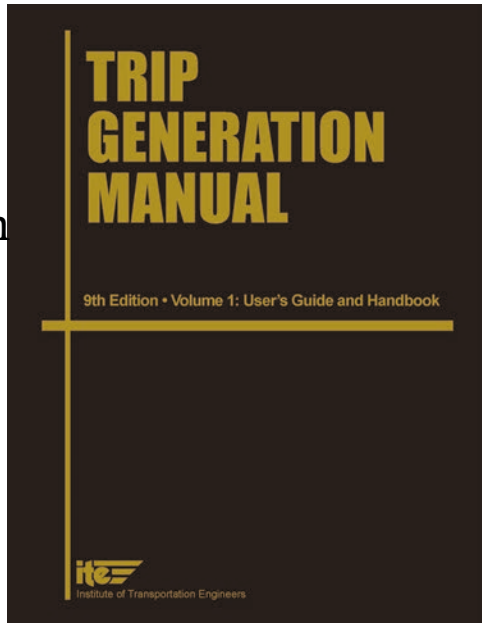
Overall, residents walked to businesses in neighborhood an average of 8.8 times in the past 30 days.

Higher in High-High TODs (10.2) vs. Low-Low TODs (7.8).



Trip Generation

ITE Trip Generation Manual, 9th Edition, 2012.



| Name (code) | Avg. | Low | High | # Studies |
|---------------------------------|------|------|-------|-----------|
| Single Family Detached (210) | 9.52 | 4.31 | 21.85 | 198 |
| Apartment (220) | 6.65 | 1.27 | 12.50 | 88 |
| Low Rise Apt. (221) | 6.59 | 5.10 | 9.24 | 22 |
| High Rise Apt. (222) | 4.20 | 3.00 | 6.45 | 9 |
| Mid Rise Apt. (223) | | | | 0 |
| Condo/Townhouse (230) | 5.81 | 1.53 | 11.79 | 56 |
| Low Rise Condo/Townhouse (231) | | | | 0 |
| High Rise Condo/Townhouse (232) | 4.18 | 3.91 | 4.93 | 4 |



Trip Generation: Home-based MV trips per unit

ITE Trip Generation Manual, 10th Edition, 2017: Added mixed use, urban categories

Portland Area TODs

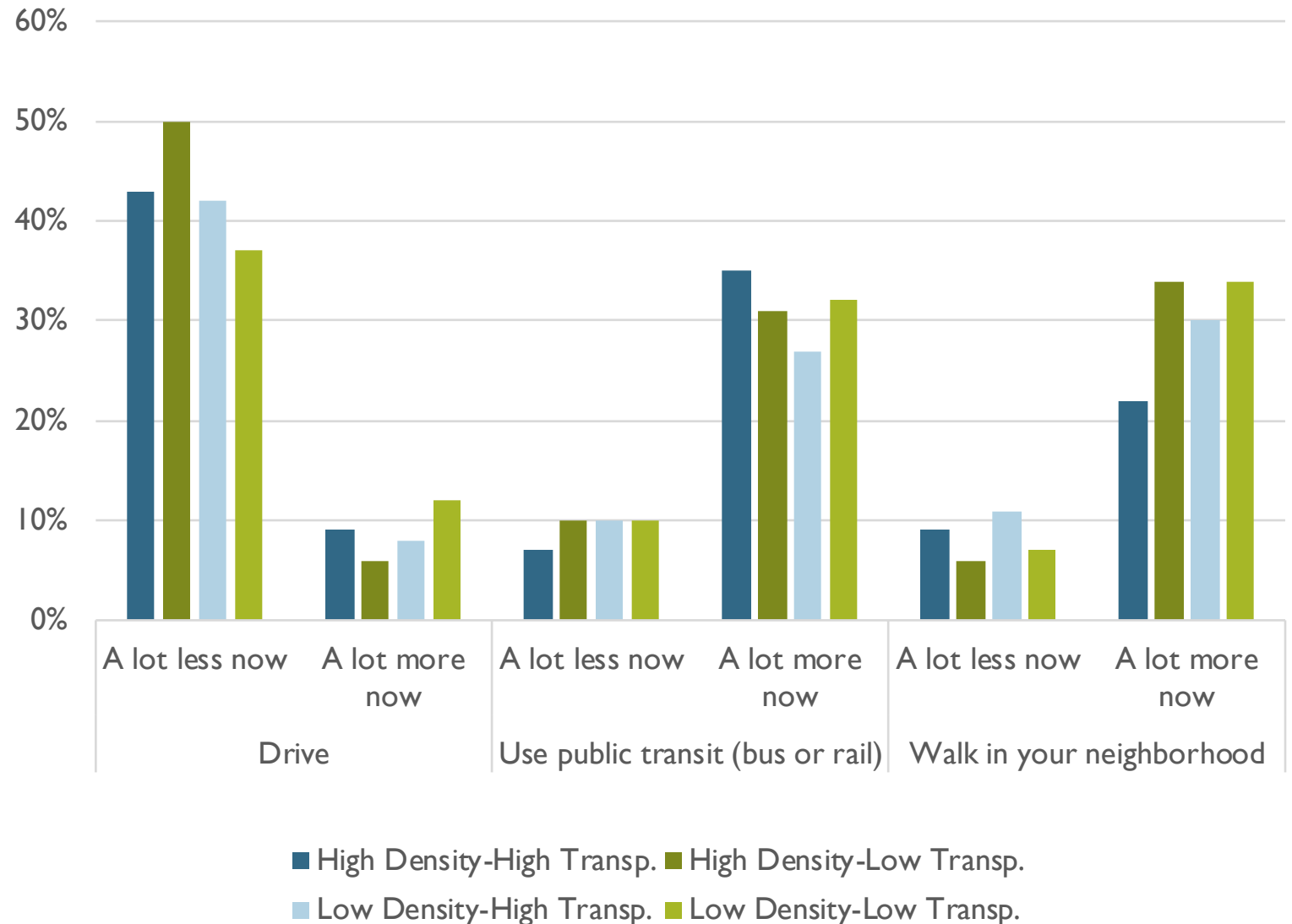
| Name (code) | Unit Type | Setting/ Location | Average Rate | Range of Rates | # Studies |
|---|-------------------------|-------------------------|--------------|----------------|-----------|
| Multifamily Housing (Mid-Rise) (221) | Dwelling Units | General Urban/ Suburban | 5.44 | 1.27-12.50 | 27 |
| | Occupied Dwelling Units | General Urban/ Suburban | 4.75 | 2.95-5.49 | 4 |
| | Dwelling Units | Dense Multi-Use Urban | 2.59 | | 1 |
| | Occupied Dwelling Units | Dense Multi-Use Urban | 3.83 | 2.39-6.18 | 3 |
| | Occupied Dwelling Units | Center City Core | 3.74 | 3.16-5.14 | 3 |
| Mid-Rise Residential with 1st-Floor Comm. (231) | Dwelling Units | General Urban/ Suburban | 3.44 | | 1 |
| | Occupied Dwelling Units | General Urban/ Suburban | 3.62 | | 1 |

| TOD type | High Transit Access | Low Transit Access |
|---------------------|---------------------|--------------------|
| High Density | 1.72 (n=6) | 3.50 (n=3) |
| Low Density | 2.45 (n=11) | 2.41 (n=14) |

Changes in mode use since moving to TOD

No significant differences in shares stating they are driving a lot less now.

High-High TOD residents most likely to say they are using transit a lot more now, though only significantly more than the Low-High TOD residents.



Living near
transit was
important to
most residents

46% indicated that access to transit was “4: extremely important” in choosing their current home
26% rated it a 3 out of 4

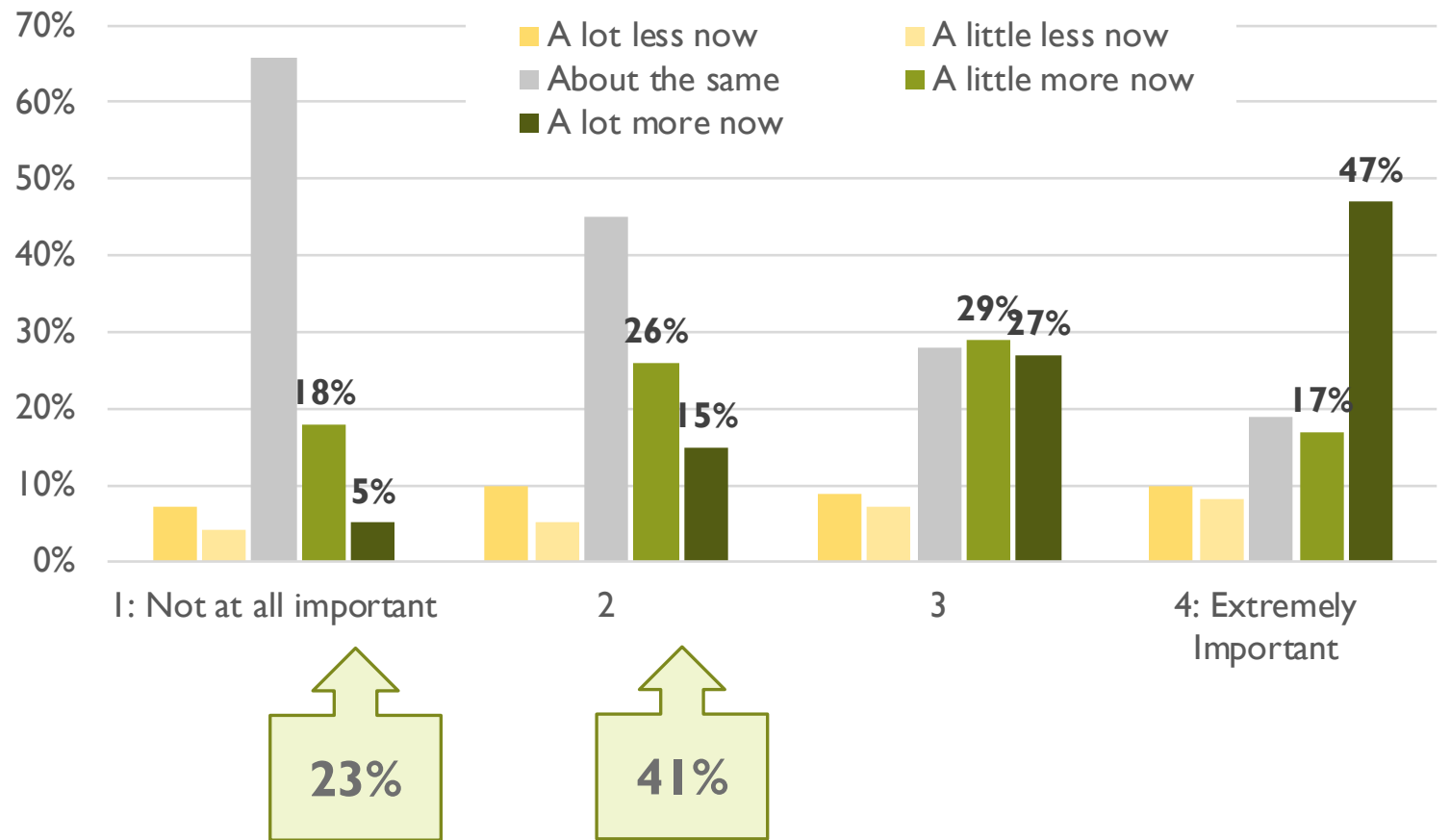
The preference for living near transit did not vary between the types of TODs.

Attitudes and preferences are important

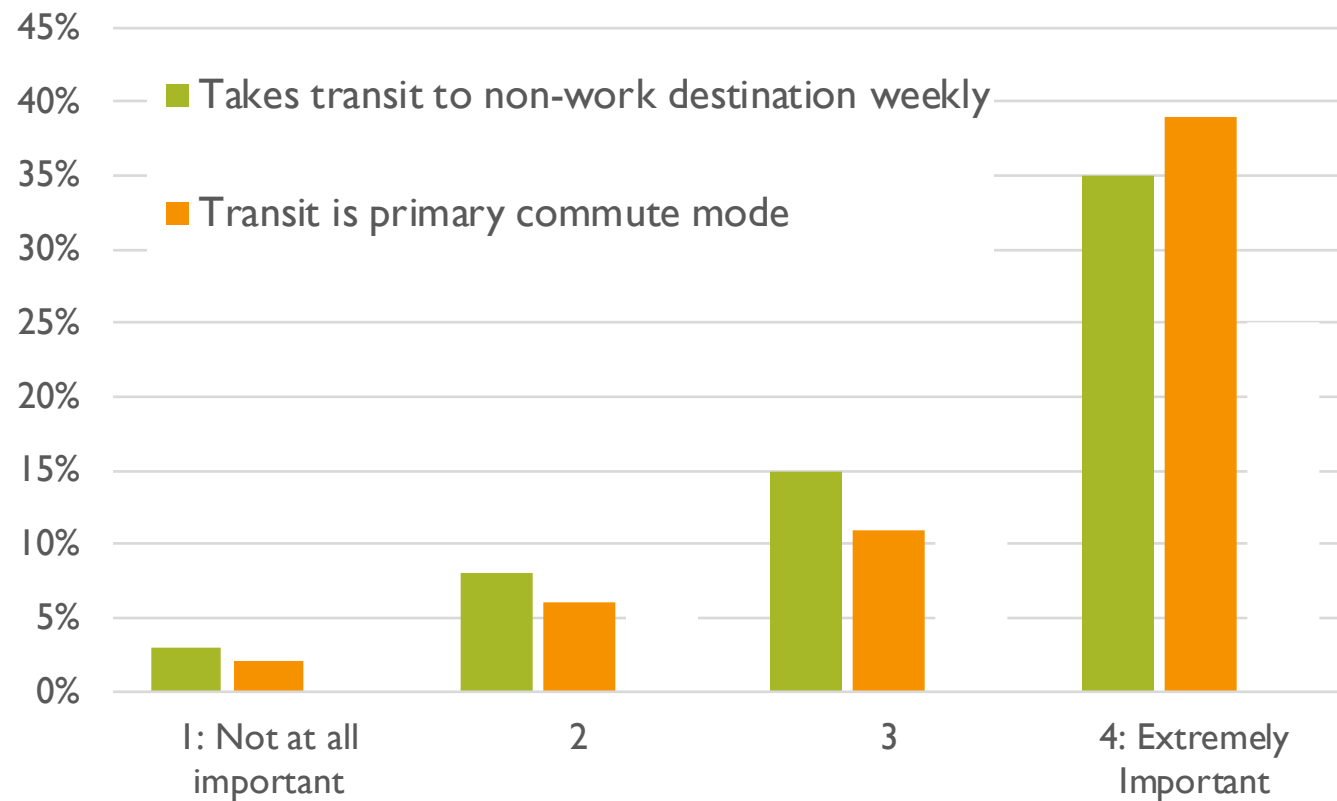
The level of importance of transit access in housing choice is correlated with changes in travel by transit, but there is still increased transit use among those for whom it was not important.

Note: Does not include senior-focused TODs.

46% indicated that access to transit was “4: extremely important” in choosing their current home
26% rated it a 3 out of 4

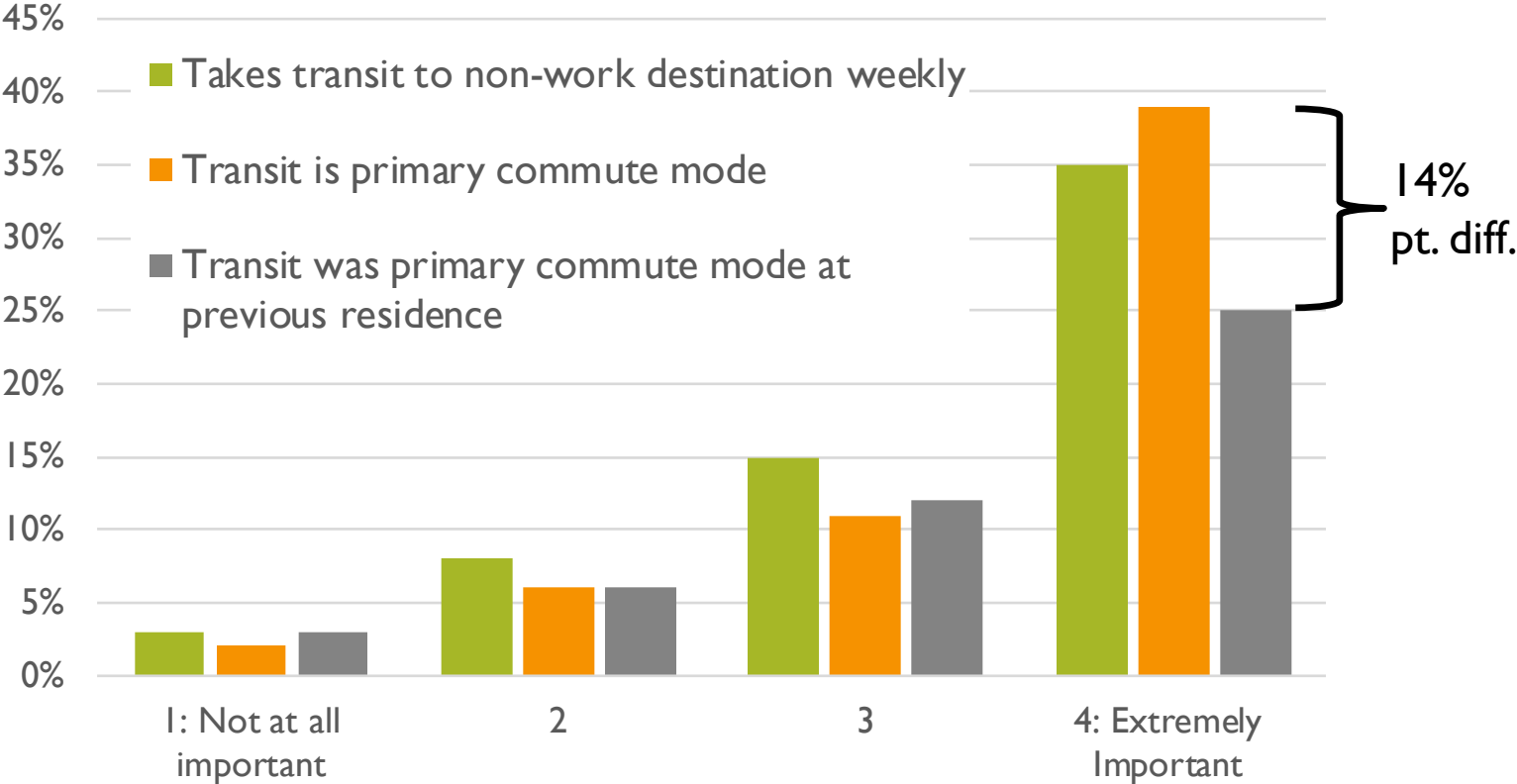


Preferences are correlated with transit use



Preferences are correlated with transit use

Commuting by transit goes up significantly among those with the highest preference for living near transit.



Conclusions (part I)

Demographics of TOD residents differs some from the surrounding cities, though likely mainly a function of the housing type

TOD residents are commuting by transit (more than surrounding cities)

TOD residents do not use transit much for non-commute travel

- Residents are walking to nearby destinations

Trip generation is likely much lower than traditional ITE rates

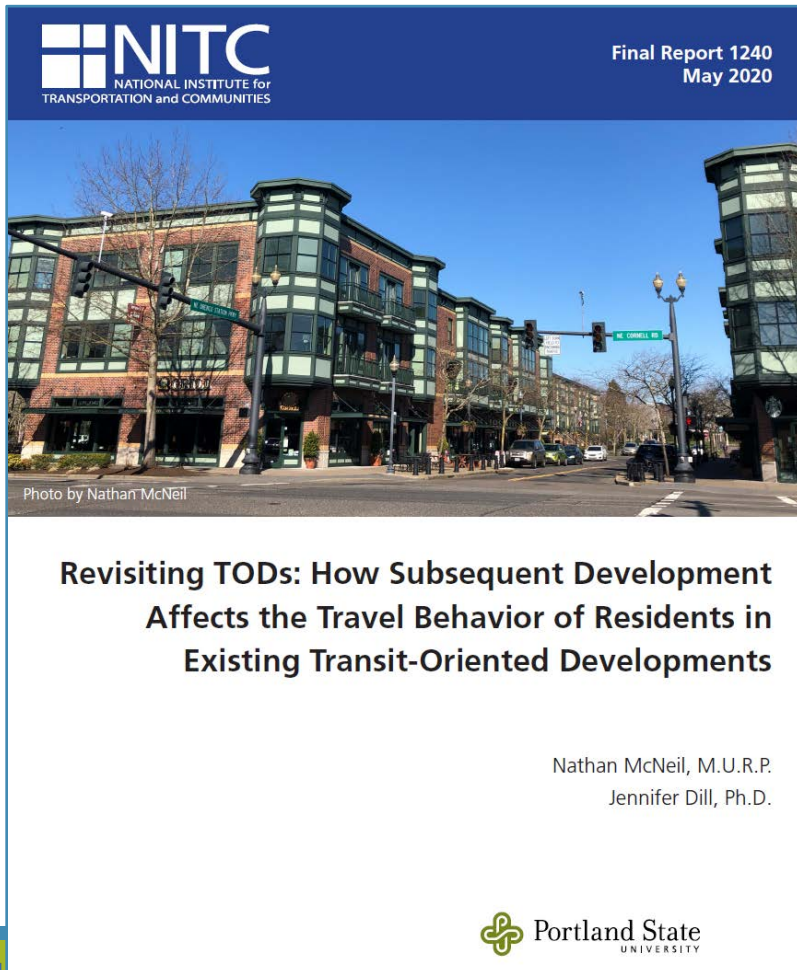
Many TOD residents claim to be driving less and taking transit and walking more since moving to the TOD

Preference for transit plays a role in behavior, but not the only factor.

TOD is likely enabling people who want to use transit more to do so



Revisiting TODs & Neighborhood Change



Original surveys conducted between 2005 and 2018

NITC funded research conducted in 2018 and 2019 looking at change over time

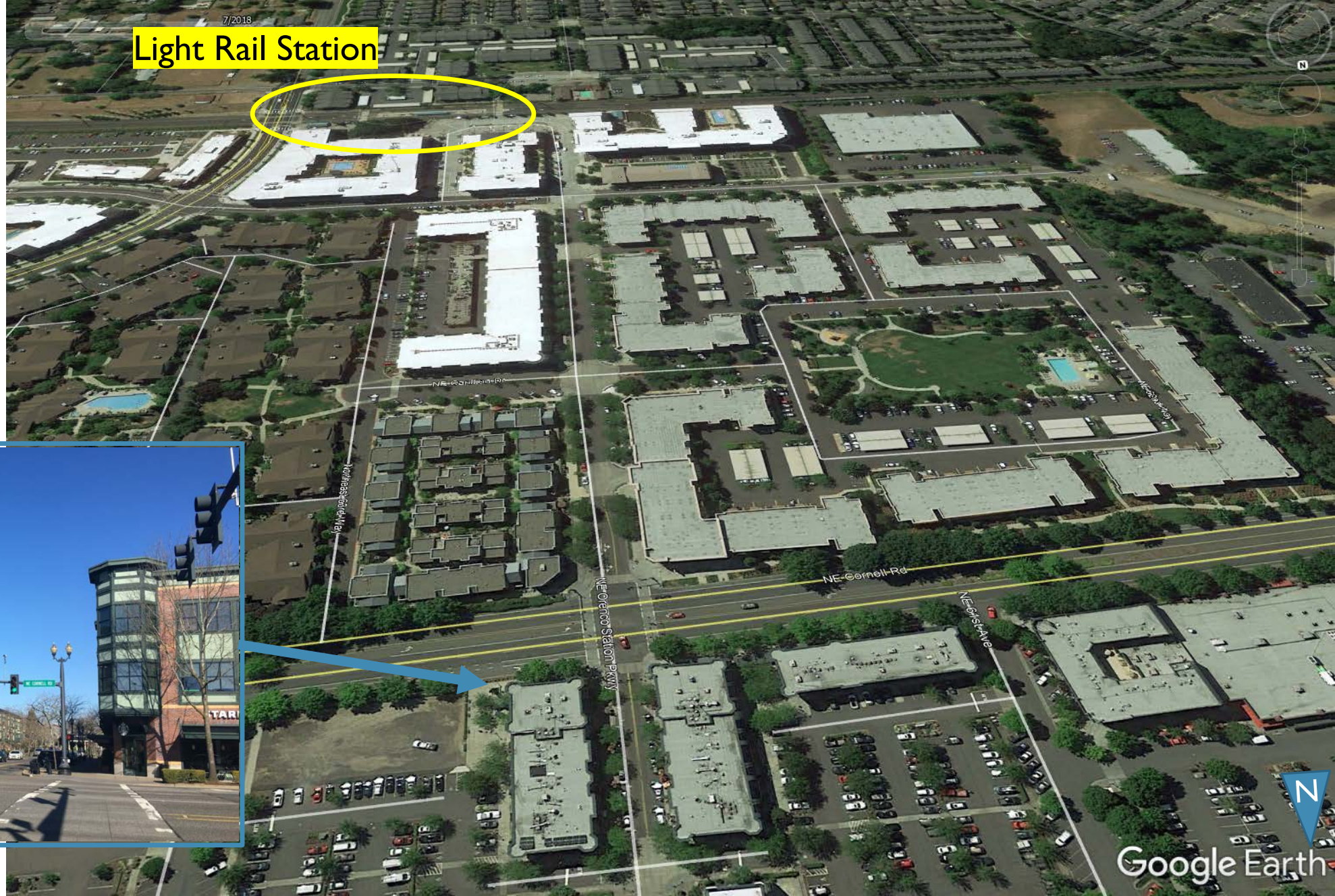
Selection of Buildings

Survey Current Residents

Orenco Station, 2003



Orenco Station, 2018



Beaverton Round, 2005

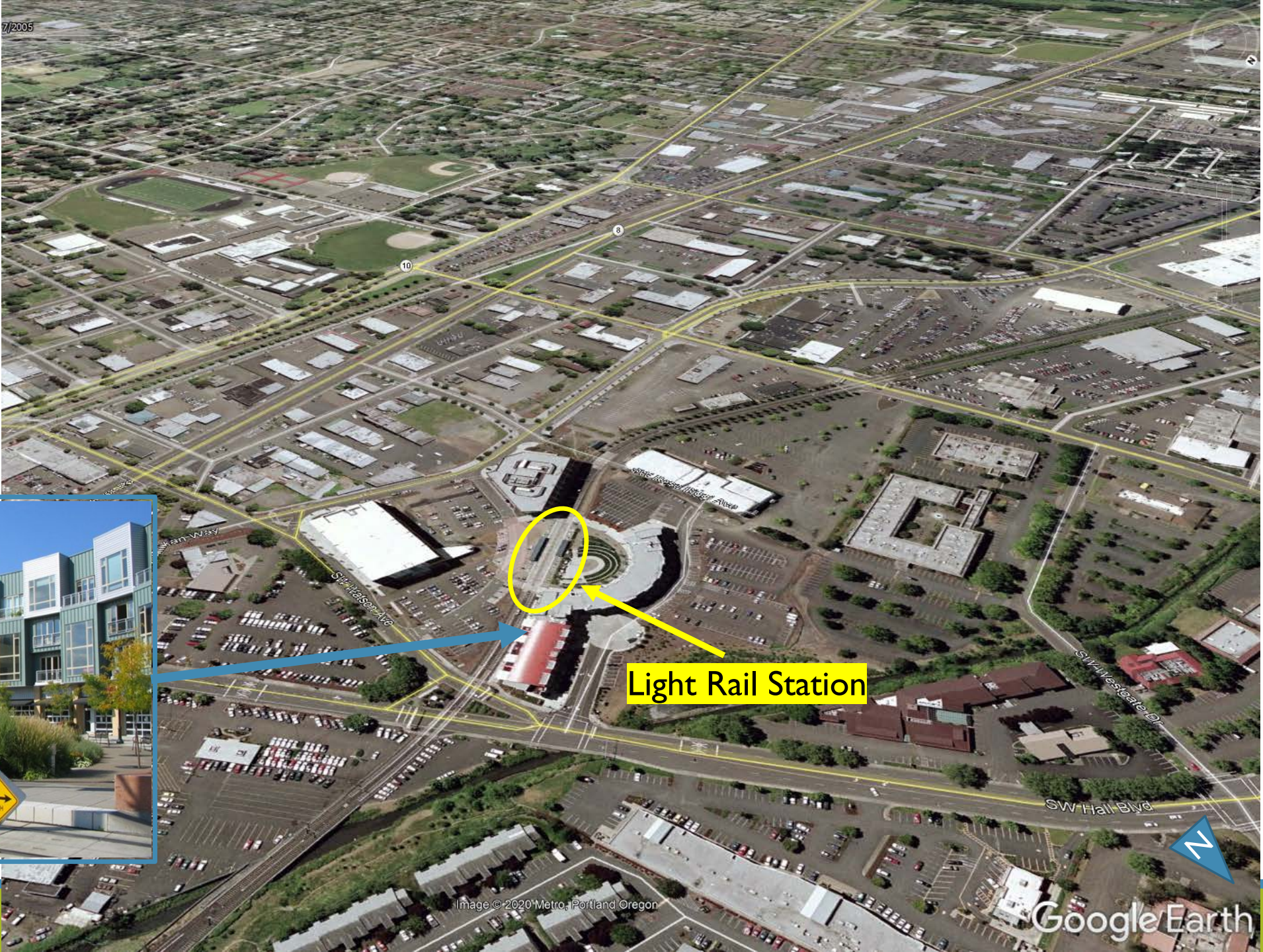


Image © 2020 Metro, Portland Oregon

Google Earth

Beaverton Round, 2018

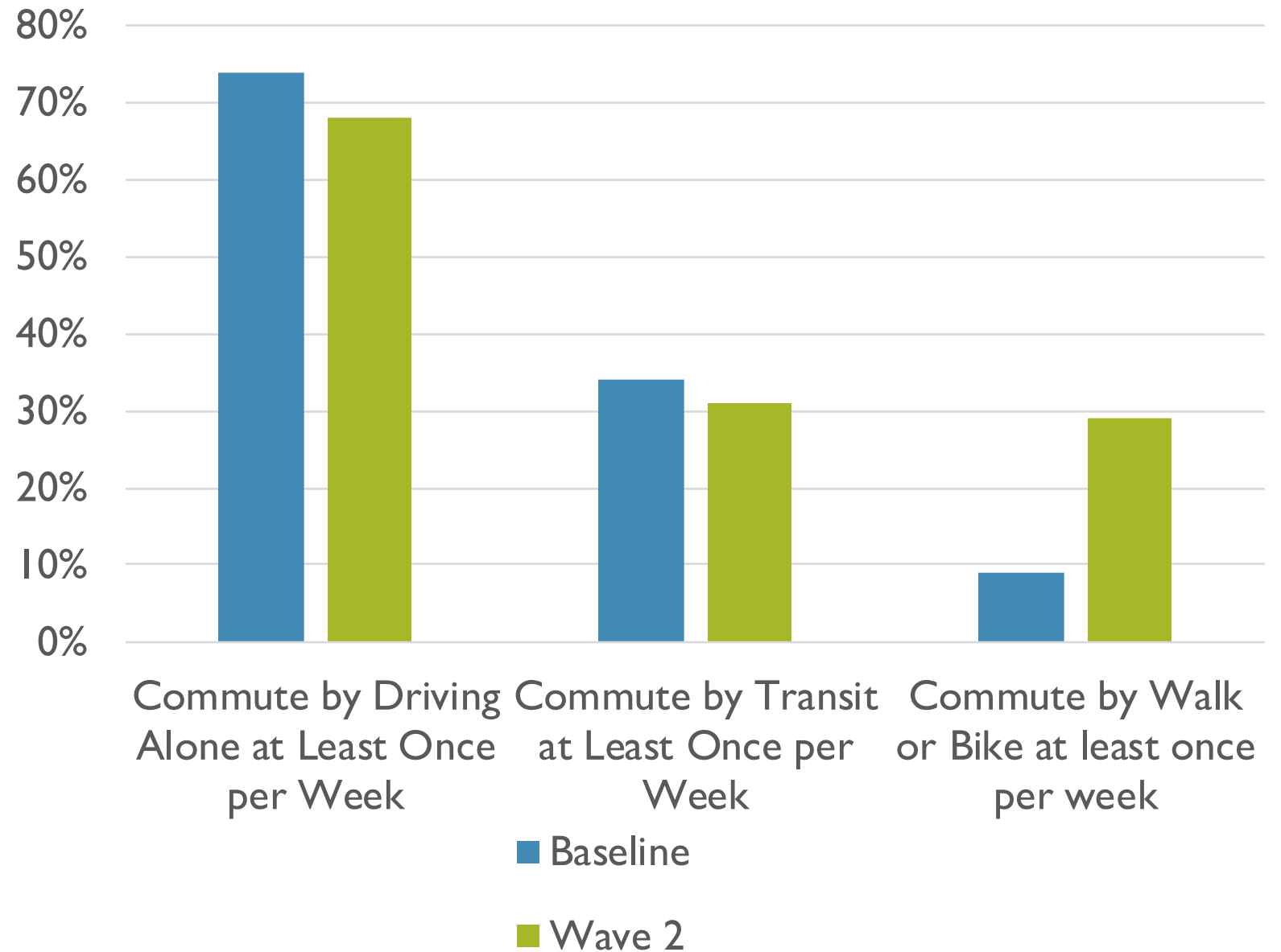


Neighborhood Change

| Building | Land-Use Change | Destinations Change | Walk Bike Network Change | Transit Change |
|--------------------|-----------------|---------------------|--------------------------|----------------|
| East Portland TODs | Minor | Moderate | None | Yes |
| Gresham Central | Minor | Minor | Major | No |
| Gresham TODs | Minor | Moderate | Major | No |
| Beaverton Round | Minor | Major | Minor | No |
| Nexus Apartments | Major | Moderate | Major | No |
| Club 1201 | Major | Major | Minor | No |
| Orenco MFH | Moderate | Major | None | Yes |
| Elmonica Condos | Major | Minor | Major | No |

Commuting at least once per week by ...

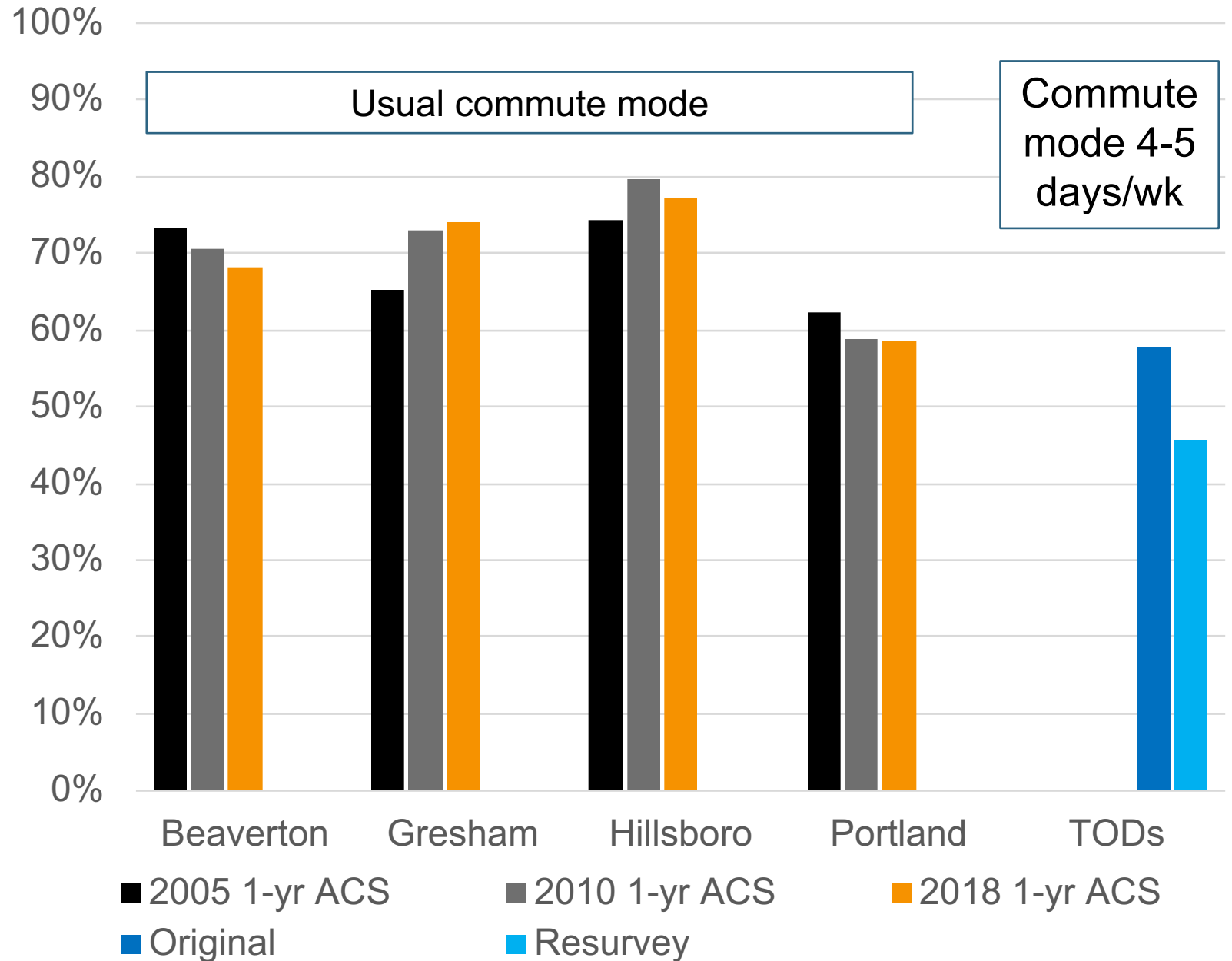
walking or biking to work at least one day a week rose from 9% to 29%



Commuting by Drive Alone

share of people commuting to work by driving alone four to five days a week fell from 58% to 46%

the share never driving alone rose from 11% to 24%



Orenco Station and Beaverton Round

Commute Travel

| | Orenco Station | Beaverton Round |
|---|------------------|-------------------------------|
| Working | ~40% retired (↑) | 87% work outside the home (=) |
| Drive alone once per week or more | 76% (=) | 86% (=) |
| Transit once per week or more | 12% (↓) | 50% (=) |
| Walk / Bike once per week or more | 25% (↑) | 36% (↑) |

Non-Commute Walk Trips

| | Orenco Station | Beaverton Round |
|----------------------------------|----------------|-----------------|
| Walk around neighborhood | 24 / month (=) | 8 (↑) |
| Walk to store or business | 14 / month (=) | 6 / month (↑) |

Revisiting TODs: Conclusions

- Key results consistent with TOD objectives
 - Decrease in drive alone commuting
 - Increase in walk / bike commute
 - Share of people living in low-car households (fewer cars than adults) increased from 34% to 50%
- Increased preference for walking rather than driving
- Fewer changes than expected in non-commute trips
- Further modeling required to disentangle land use and demographic change
- May have been limited by the variety of geographies

**Findings From 15 Years of
Travel Surveys at Portland
Area Transit-oriented
Developments (TODs)**

Thank you!

<https://trec.pdx.edu/research/project/1240>

Jennifer Dill, PhD, jdill@pdx.edu

Nathan McNeil, nmcneil@pdx.edu



Portland State
UNIVERSITY

