

The Influence of the L.A. Metro Rail System on Population Flows

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L.A. Metro Rail system expansion: Who are the winners? Who are the losers?



Possible rail -> gentrification -> displacement connection

1. New rail station → improved neighborhood amenity → attracts more / higher-income households
2. Increased competition for housing → increased rents (absent increase in housing supply)

GENTRIFICATION

3. Prior residents / low-income residents → no longer afford the rent. Several options:

Double-
Up

Smaller
Units

Pay
More

Move

Homeless

DISPLACEMENT

Has L.A. Metro rail system influenced population flows?

- 1. Displacement:** Have more low-income households moved away after stations open?
- 2. Destination change:** Have households changed the pattern of where they move after rail stations open?

Project innovations

Data

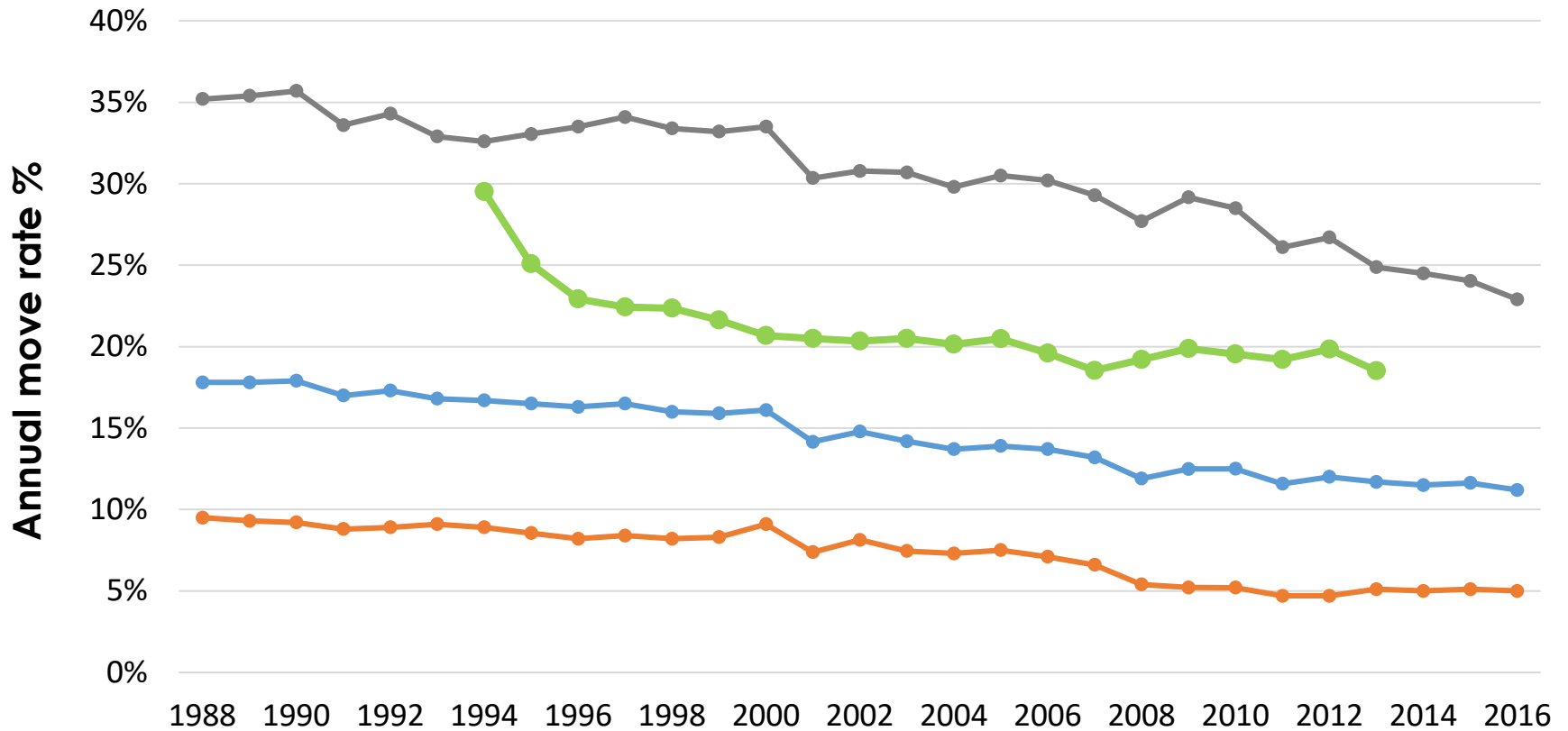
- CA state tax return data for Los Angeles County
- >100 million records from 1993-2013
- ~85-90% of CA households file taxes; and at least >75% of low-income households
- Location down to 9-digit or 5-digit zip code

Method

- What is a move?
 - Change in filing location from one year to the next
 - In the data, at least 2 consecutive years
 - Move a distance of at least 0.5 miles
- Compare patterns in rail neighborhoods to similar non-rail neighborhoods

~21% of LA County households move annually, reflecting high renter proportion

U.S. National versus Los Angeles County Move Rates

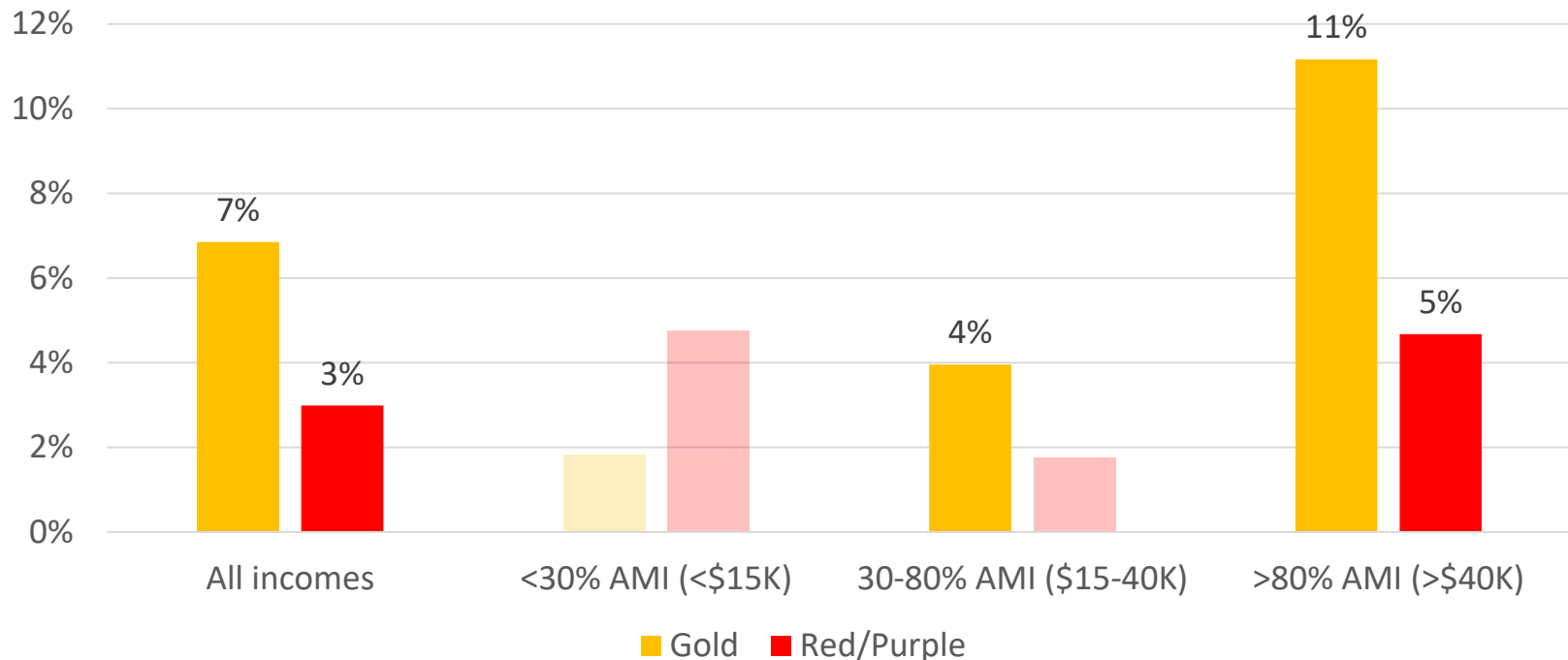


<ul style="list-style-type: none"> U.S. All Households U.S. Homeowners U.S. Renters <p>U.S. Current Population Survey</p>	<ul style="list-style-type: none"> L.A. County All Households <p>California FTB Data</p>
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Source: National data comes from Current Population Survey; County data comes from author calculation of California Franchise Tax Board data

New rail stations do increase move-out rates...

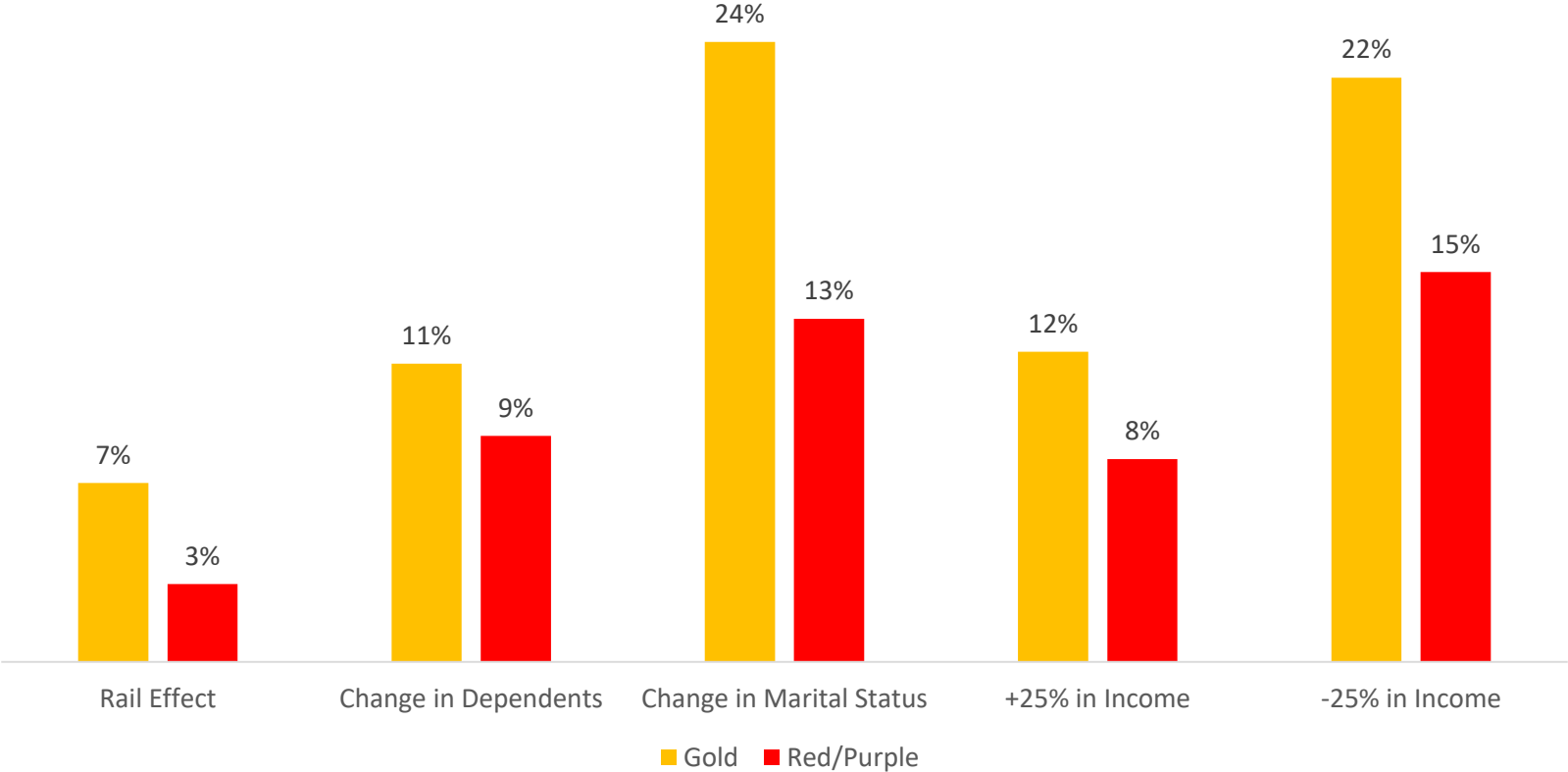
Rail Impact: Proportion of Overall Mobility Attributed to New Rail Station Opening



...but low-income residents less affected

Other household changes affect moving more than new rail stations

Impact of Different Variables on Annual Move Rates (for all incomes)



Source: Author calculations from California Franchise Tax Board data

No displacement

- Lowest-income households (<\$15,000 / year) do not increase move out rates once stations open
- Lower-middle income households (<\$15,000-40,000 / year): ↑ by 4% for Gold Line, no impact for Red / Purple
- Middle and higher income households (>\$40,000) see move rates increase most (↑ 11% Gold, ↑ 5% Red/Purple)

But, does move location change?

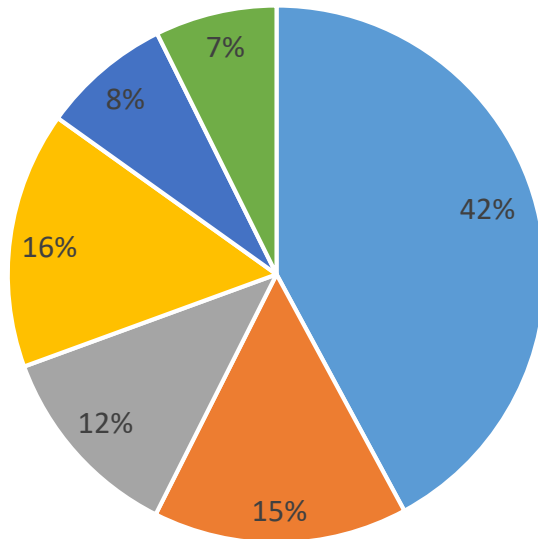
Destination change: Have households changed move destinations after rail stations open?

- Map most popular move destinations for neighborhoods with L.A. Metro rail stations
- Compare patterns before / after stations open
- Analyze move destinations by income
- Maps based on zip codes
- Case example: **Gold Line – Boyle Heights / East L.A. Branch**

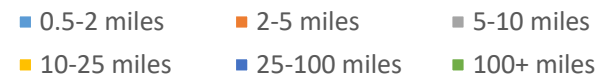
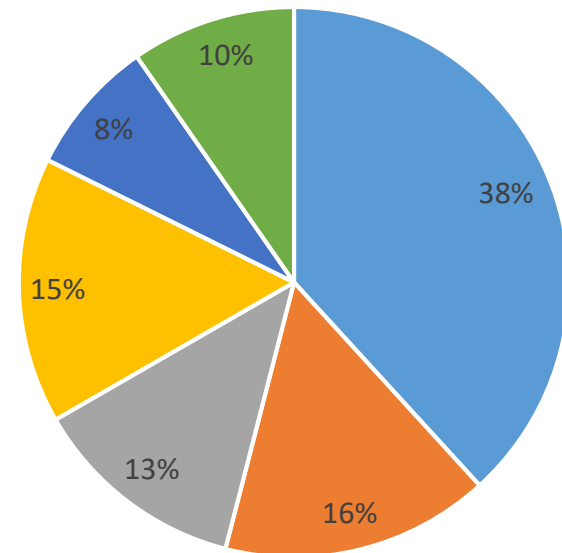
Most households do not move very far

Move Distance for Households living near Gold Line – Boyle Heights / East L.A. Branch

Pre-Rail Station

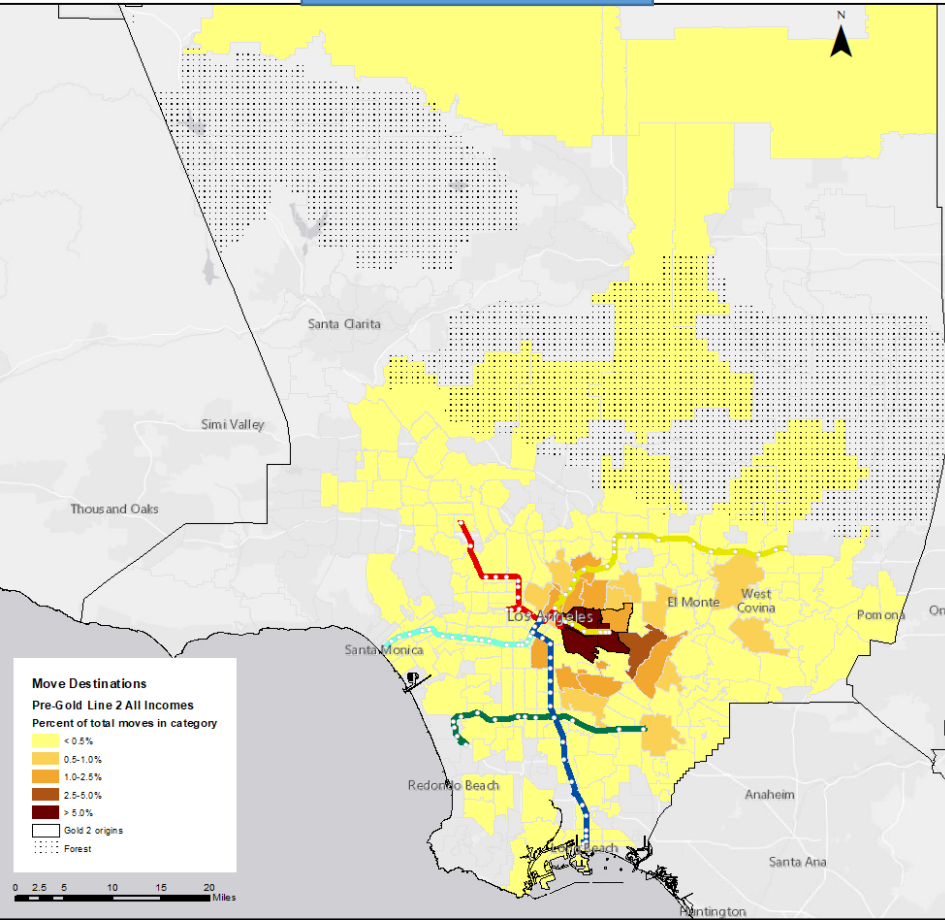


Post-Rail Station

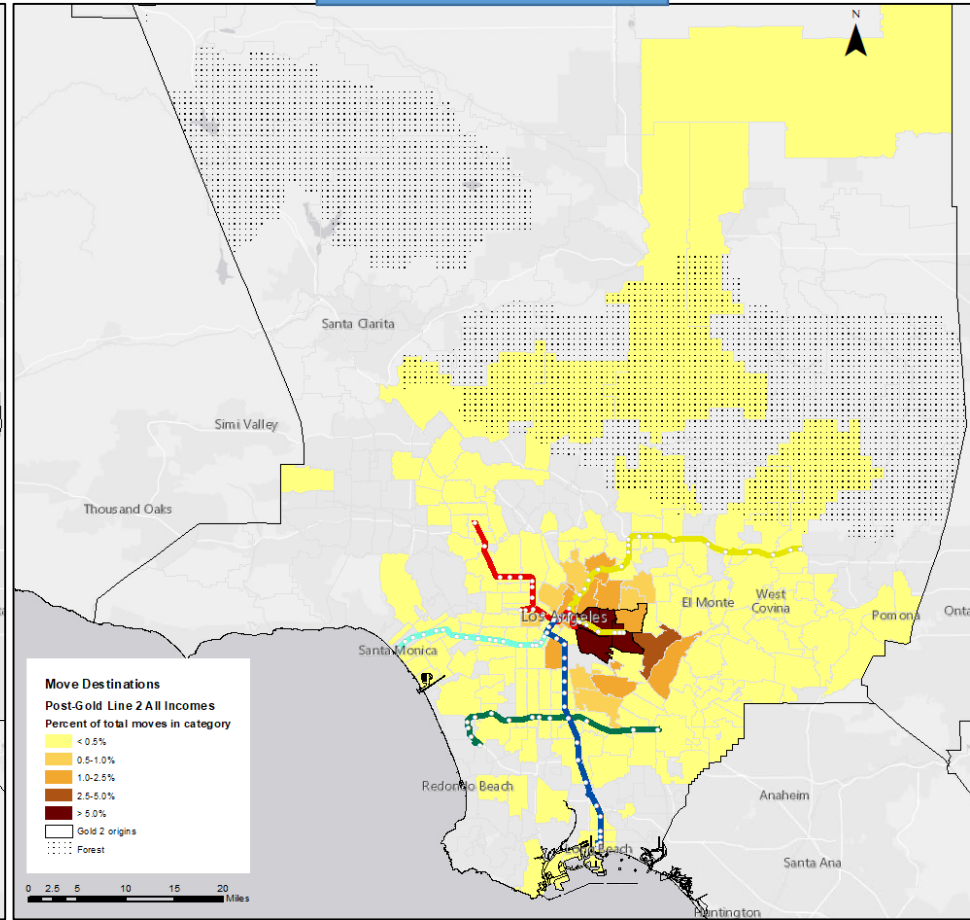


Gold Line -- Boyle Heights / East L.A. (opened 2009)

Pre-Rail



Post-Rail



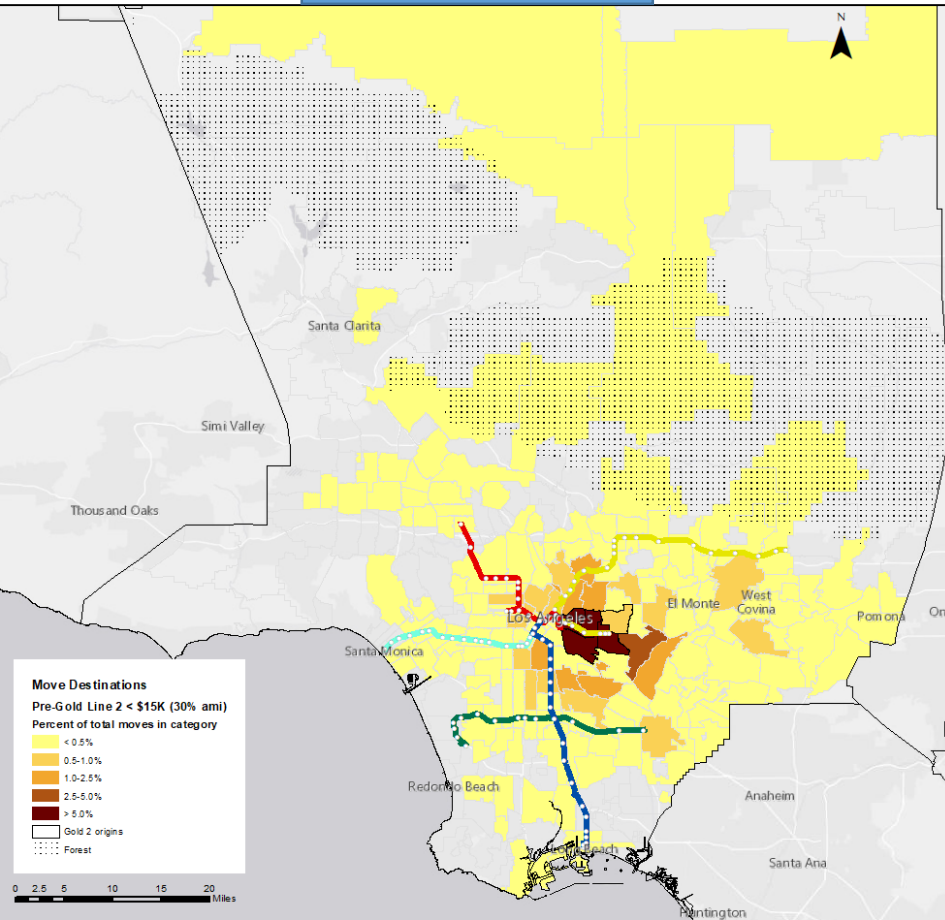
All Incomes

Note: Only zip codes with at least 10 moves, from 1993-2012 shown, for confidentiality reasons

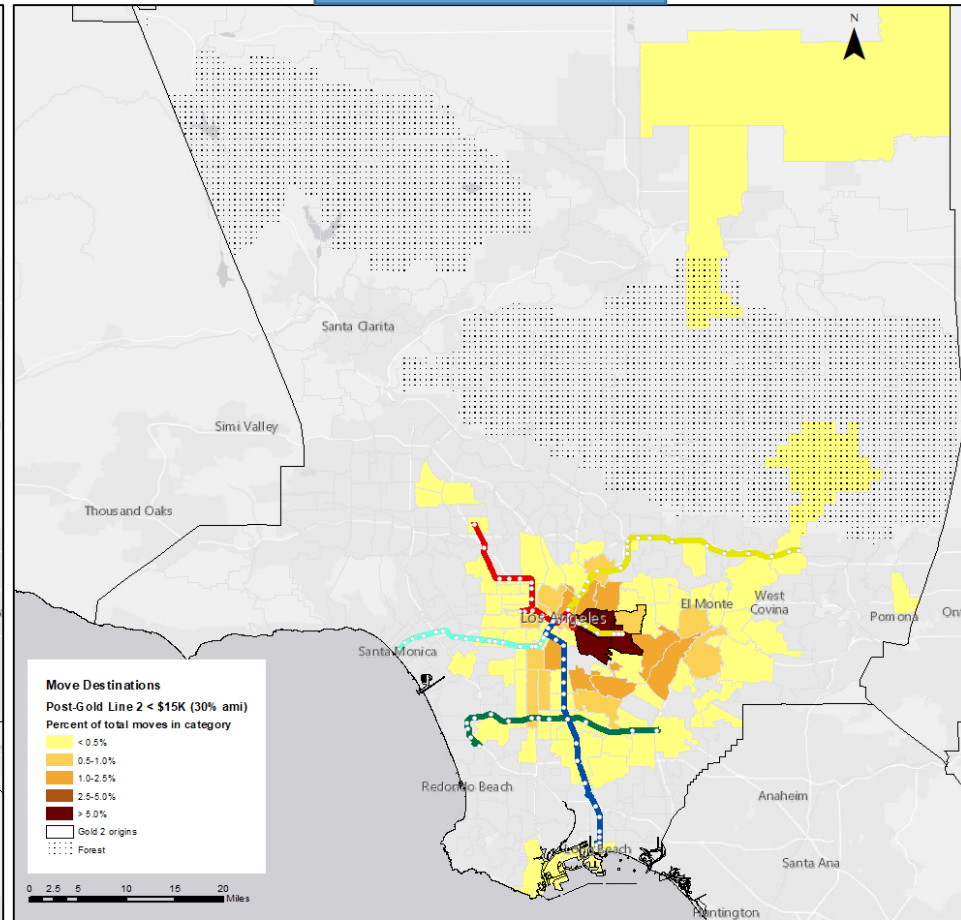
Source: SCAG, LA County GIS, LA City Planning, Get, HERE, DeLorme, MapMyIndia, OpenMapData contributors and the GIS User community. Seva Rodnyansky's calculations on California Franchise Tax Board data., Created in ArcGIS by Hue-Tam Webb Jamme.

Gold Line -- Boyle Heights / East L.A. (opened 2009)

Pre-Rail



Post-Rail



Lowest Income (<\$15,000 / year)

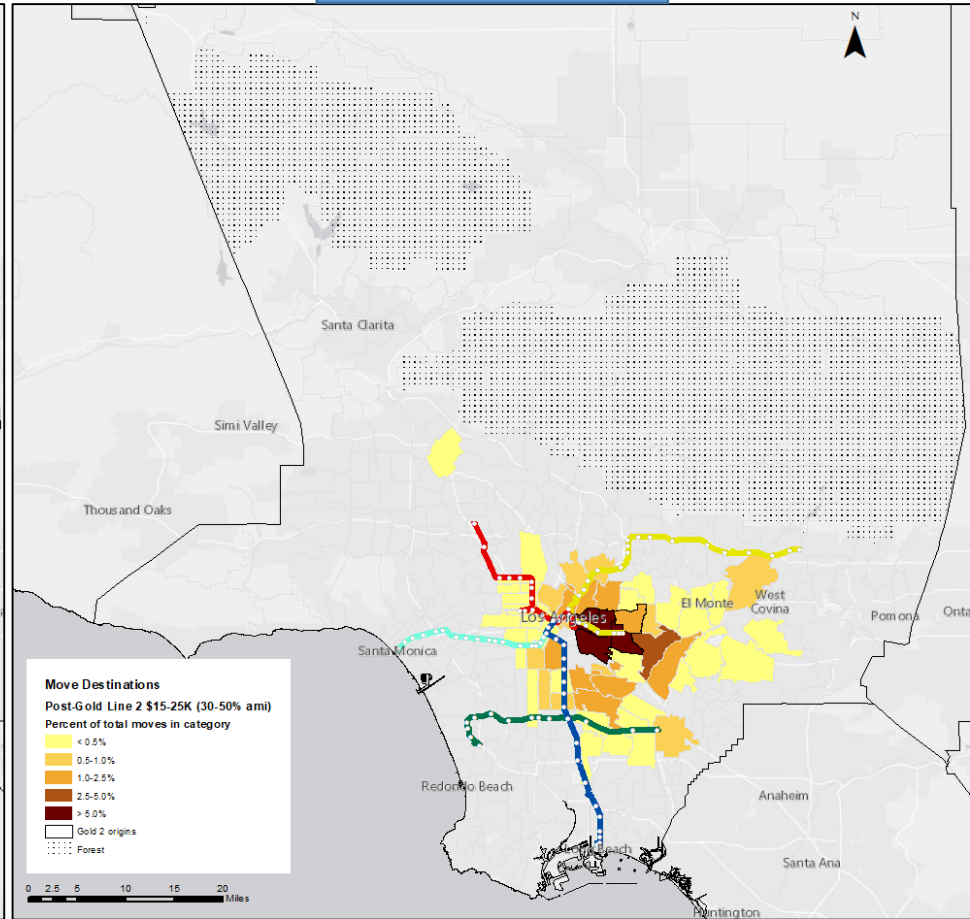
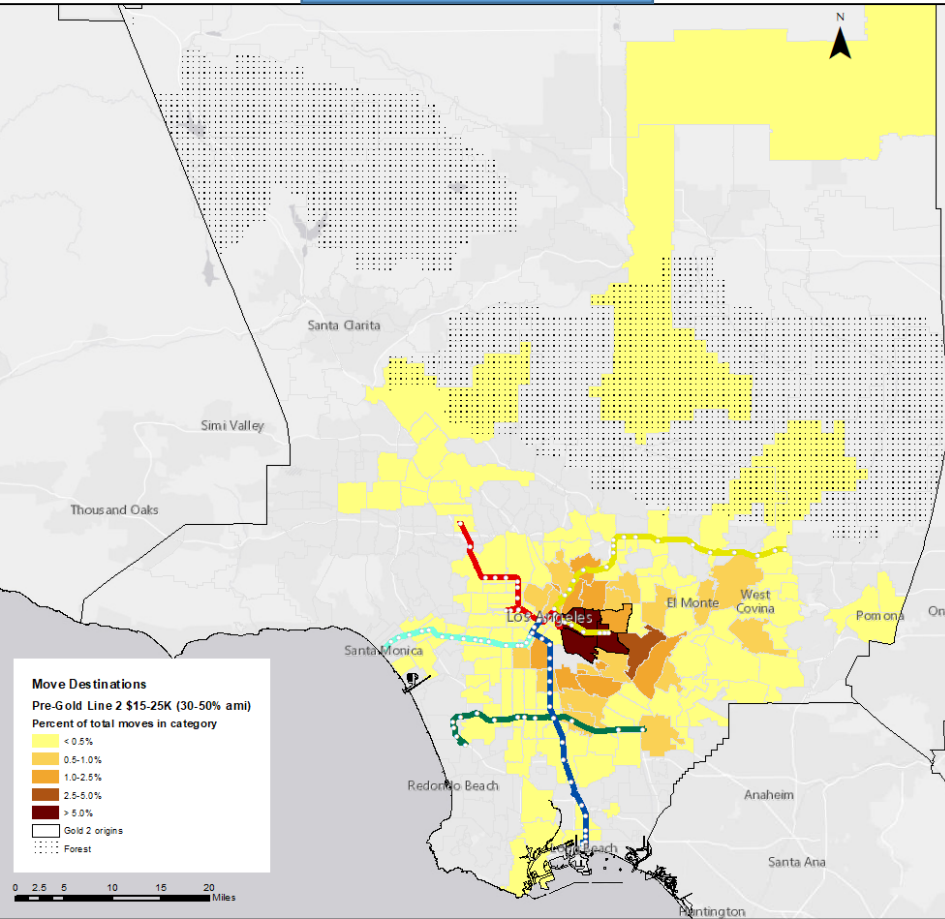
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Gold Line -- Boyle Heights / East L.A. (opened 2009)

Pre-Rail

Post-Rail



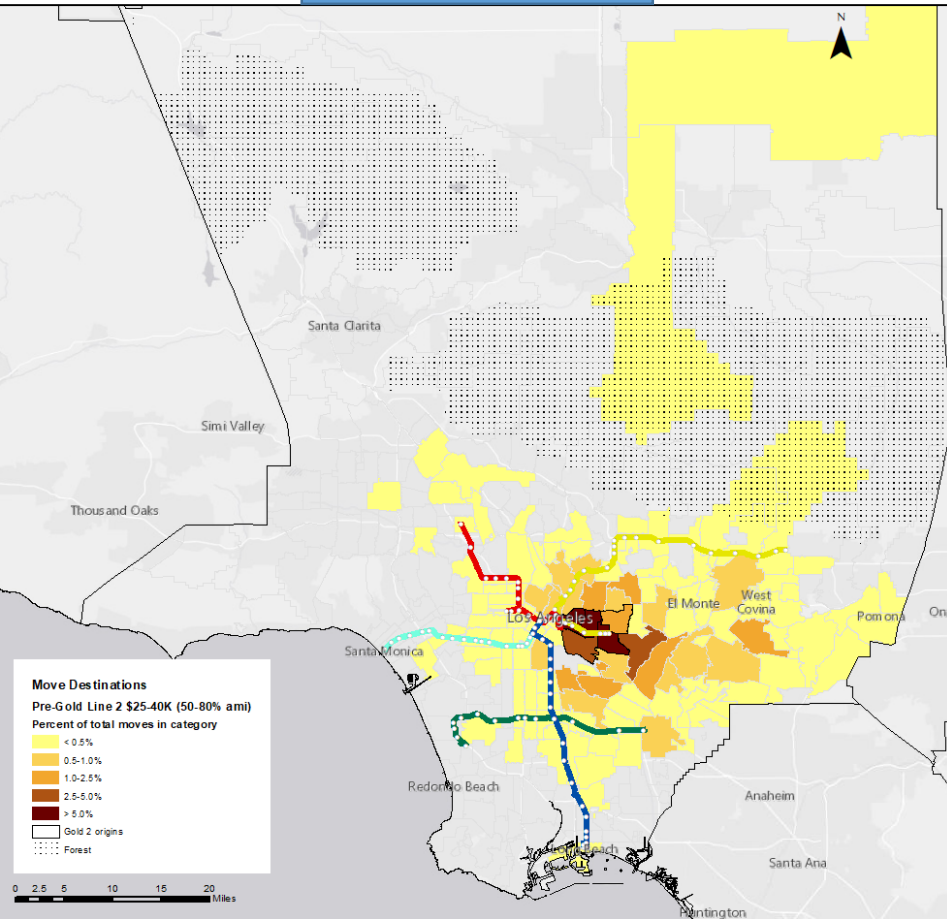
Lower Income (\$15,000-\$25,000 / year)

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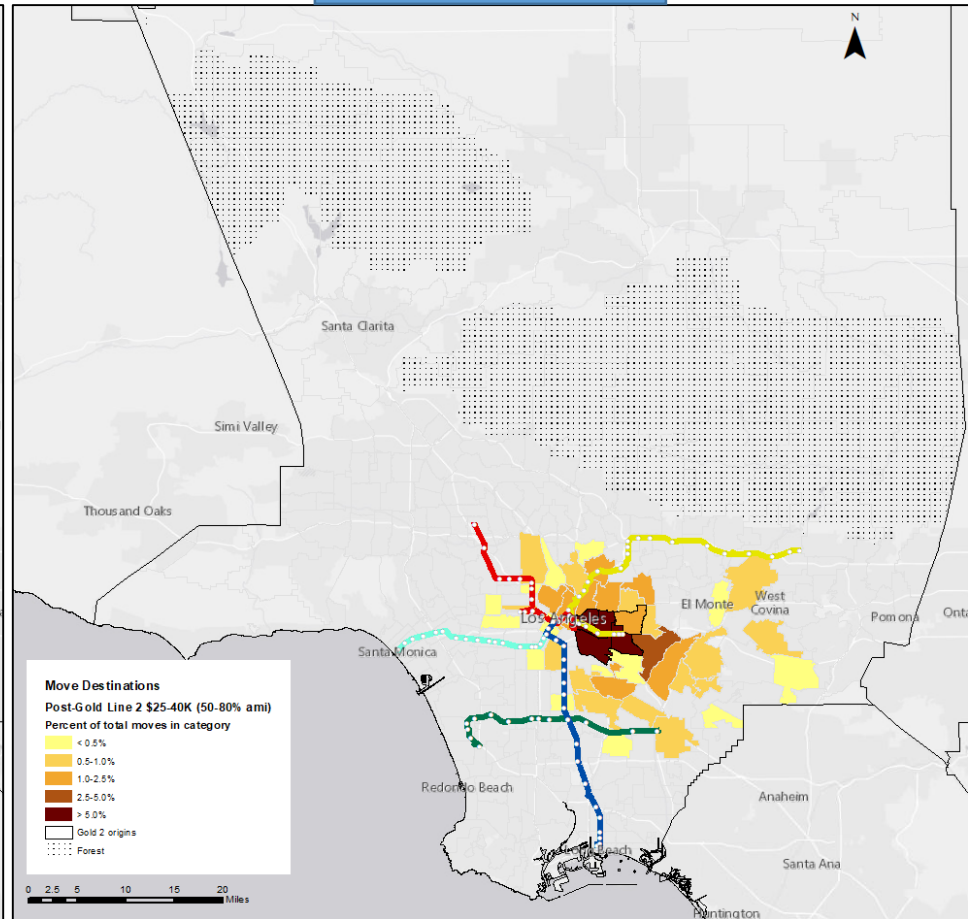
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Gold Line -- Boyle Heights / East L.A. (opened 2009)

Pre-Rail



Post-Rail



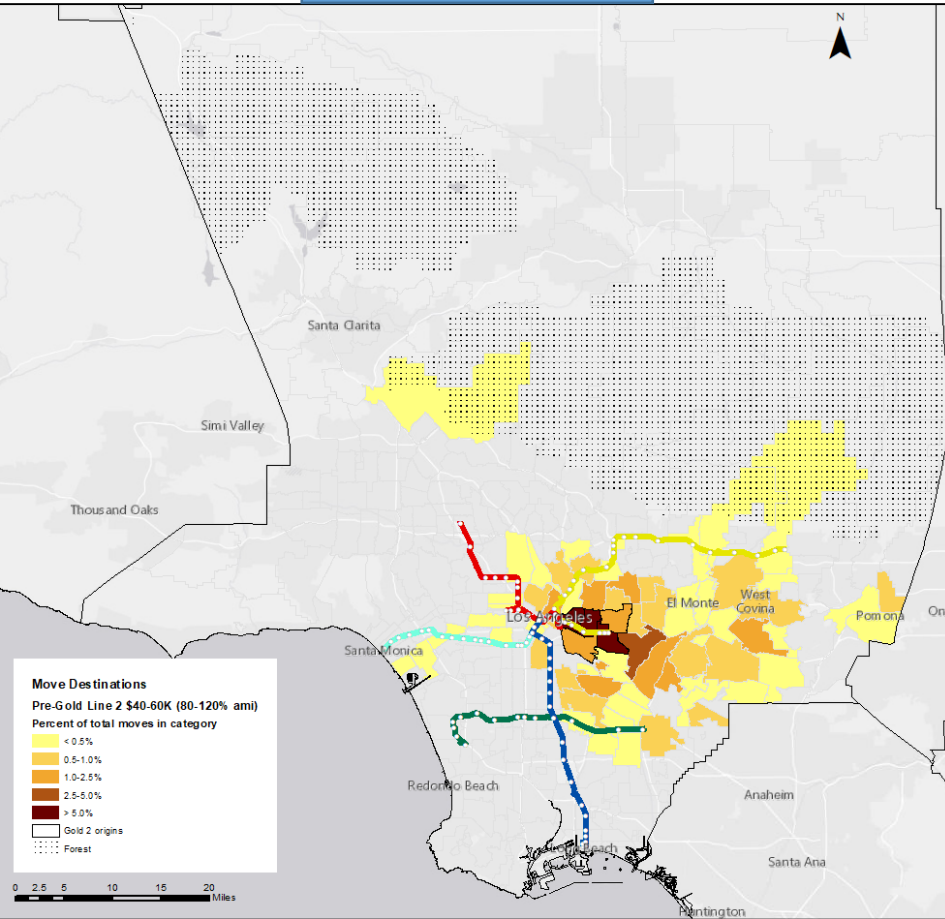
Lower-Middle Income (\$25,000-\$40,000 / year)

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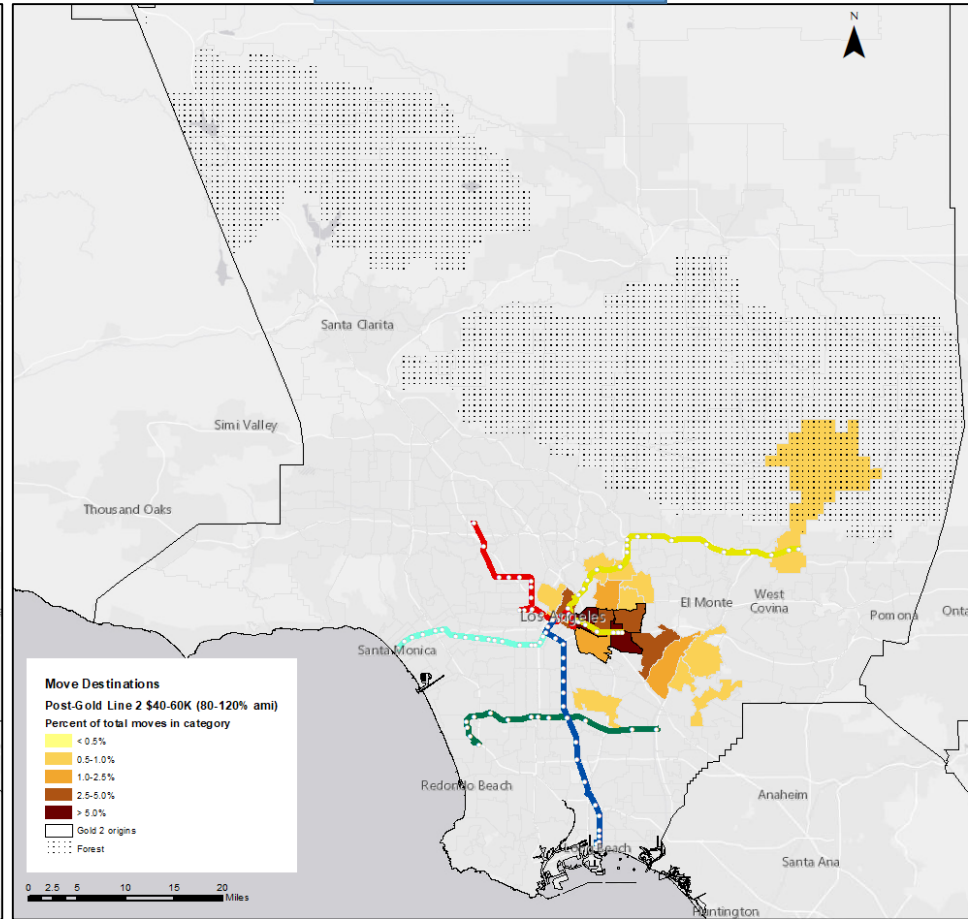
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Gold Line -- Boyle Heights / East L.A. (opened 2009)

Pre-Rail



Post-Rail



Middle Income (\$40,000-\$60,000 / year)

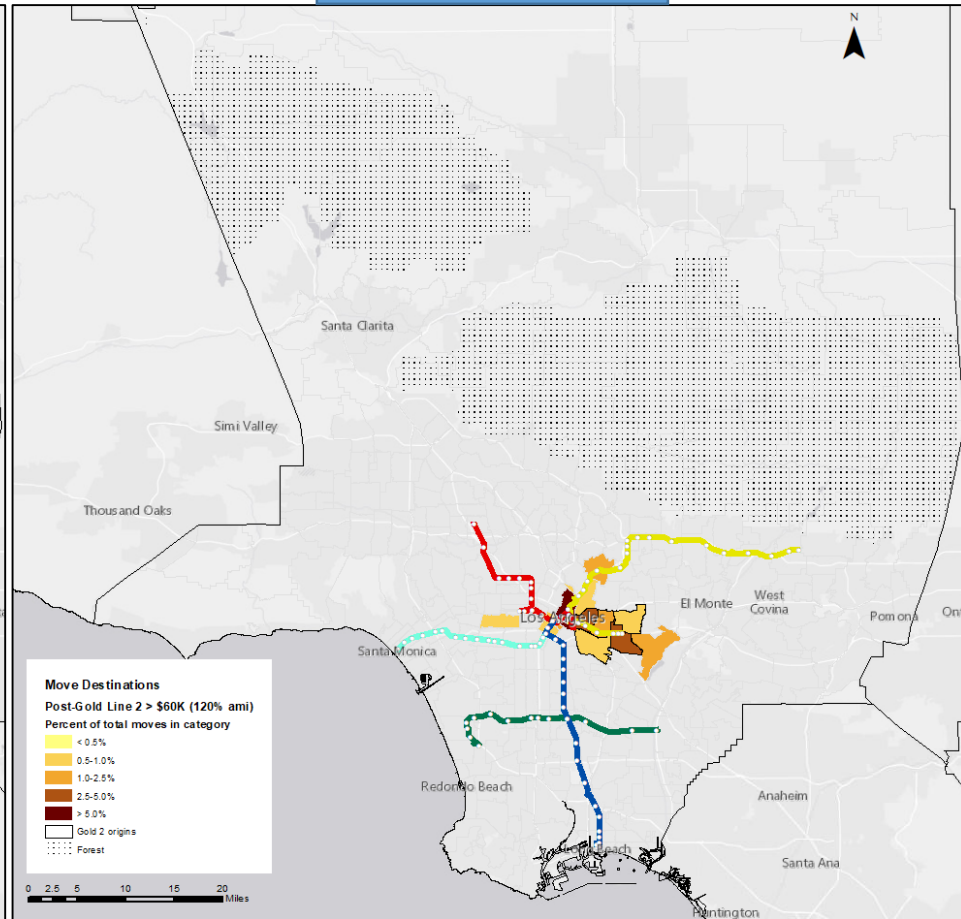
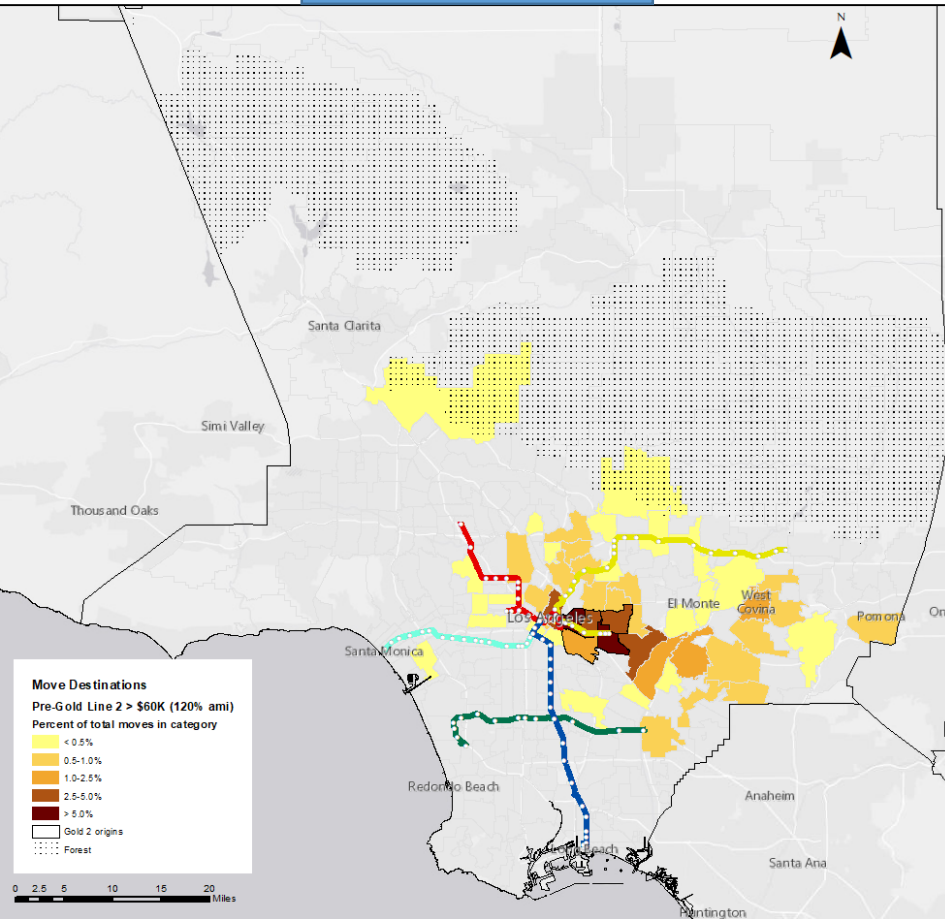
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Gold Line -- Boyle Heights / East L.A. (opened 2009)

Pre-Rail

Post-Rail



Higher Income (>\$60,000 / year)

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Move patterns evolve somewhat after rail opens

- In the Gold Line: Boyle Heights / East LA case, move locations differ somewhat after rail stations open
- Fewer households of any income moving to San Gabriel Valley or Gateway Cities
- Retrenchment in / around East L.A., Boyle Heights, Monterey Park, Montebello
- Red, Purple, and Gold Line – Pasadena branch show fewer destination shifts

Summary & Planning Implications

- Summary:
 - No evidence of Displacement for low-income residents
 - Move patterns changed in Boyle Heights / East L.A.
- Research should focus on overcrowding, transience, doubling-up
- Better equity planning to make sure households are living, and not just 'hanging on'
 - Resource allocation
 - Participatory planning
 - Local political participation

Thank you!
Questions? Comments?

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Select rail lines: LA Metro's Red/Purple and Gold lines

	Gold: Pasadena Branch	Gold: Boyle Heights Branch	Red & Purple Line	Los Angeles County average
Opening year	2003	2009	1993, 1996, 1999, 2000	
Train type	Light Rail	Light Rail	Underground Subway	
Number of stations	11	8	15	
Population Density	1.5-2x LA County	2-2.5x LA County	3.5x LA County	7,000 / square mile
Renter %	~65%	~76%	~90%	~52%
Foreign-born %	~10%	~11%	~18%	~35%
Non-white %	~74%	~95%	~69%	~73%

Difference-in-difference framework: measure before / after rail

