



Jobs-Housing Fit and Commute Performance

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From balance to *fit* over 25 years

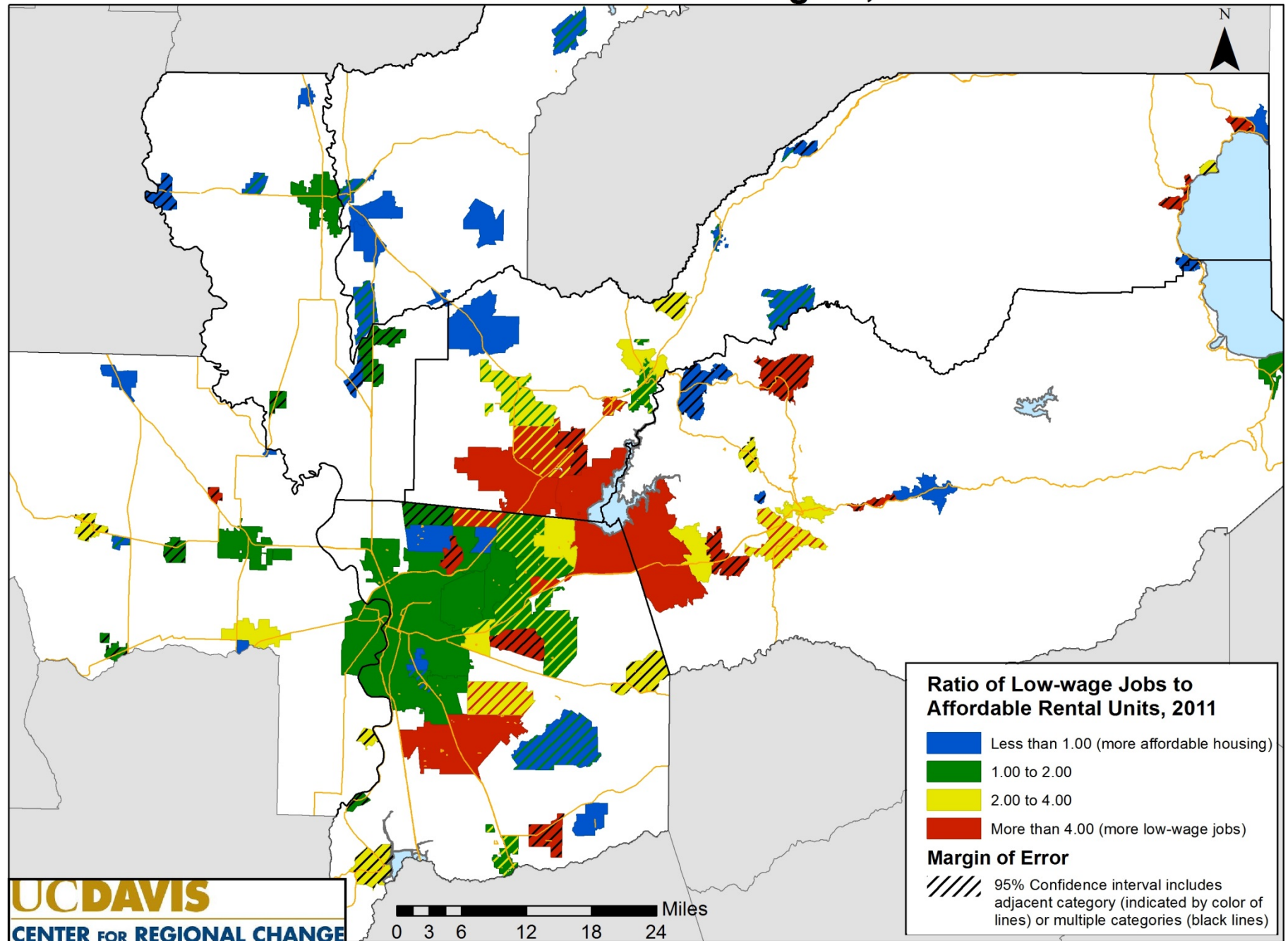
- First systematic studies in the late 1980s
- Found that commute distance was affected by a multitude of factors
- Low-income workers given special consideration
- Appropriate “fit” between jobs and housing often discussed but never explicitly studied

Method

- Low wage jobs / affordable rental units
- Jurisdiction level
 - Linked to political process and decisions regarding affordable housing provision
 - Longitudinal employer-household dynamics (Jobs), ACS (Affordable rentals)
- Tract/buffer level
 - More closely linked to VMT
 - Avoids problems with arbitrary boundaries
 - Longitudinal employer-household dynamics (Jobs), ACS + Census (Affordable rentals)

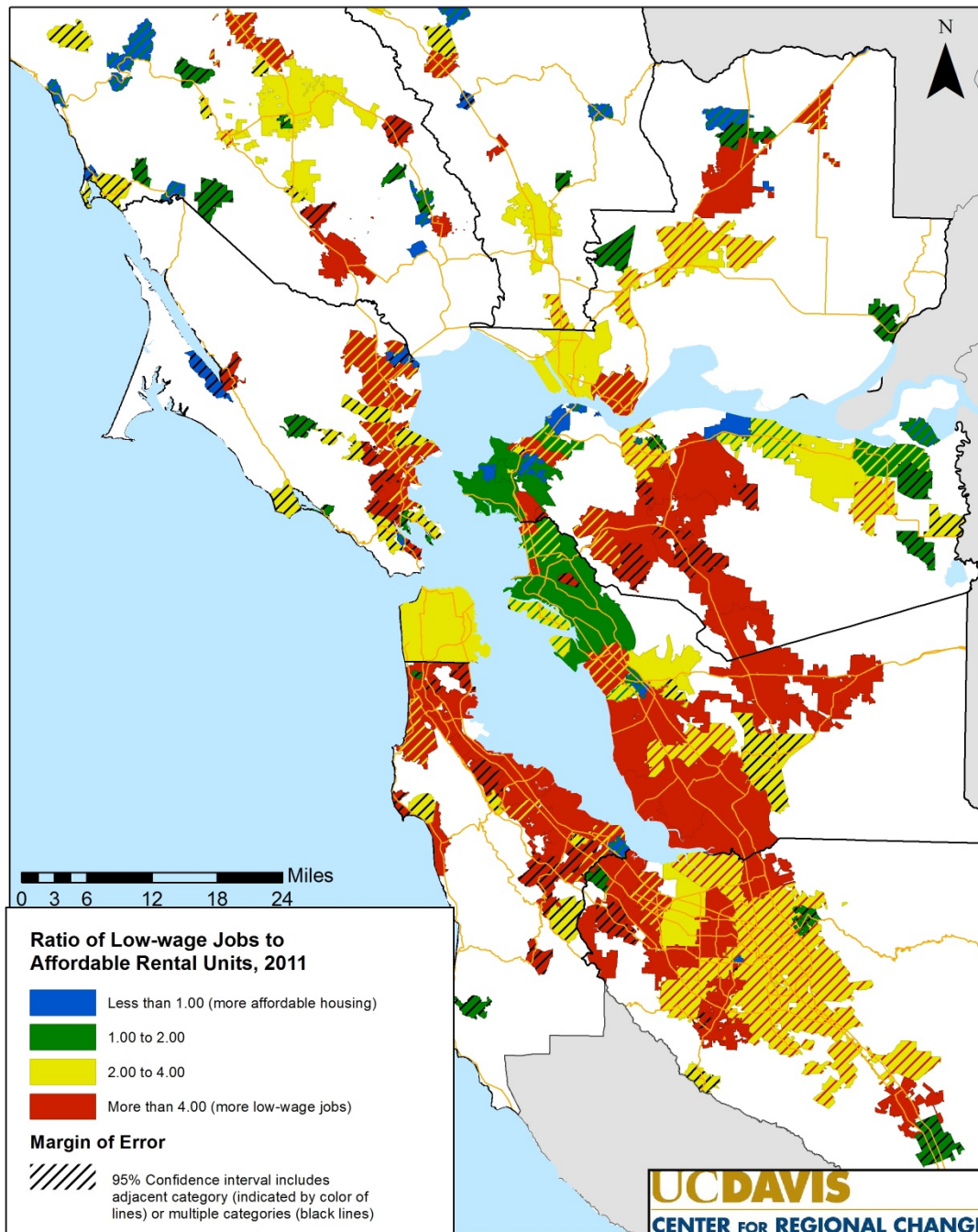
Jurisdiction level results

Sacramento Area Jobs-Housing Fit, 2011



Data source: LEHD 2011 and ACS 2011 five year data-set

Bay Area Jobs-Housing Fit, 2011



Data source: LEHD 2011 and ACS 2011 Five year data-set

Data available for every CDP in the state:

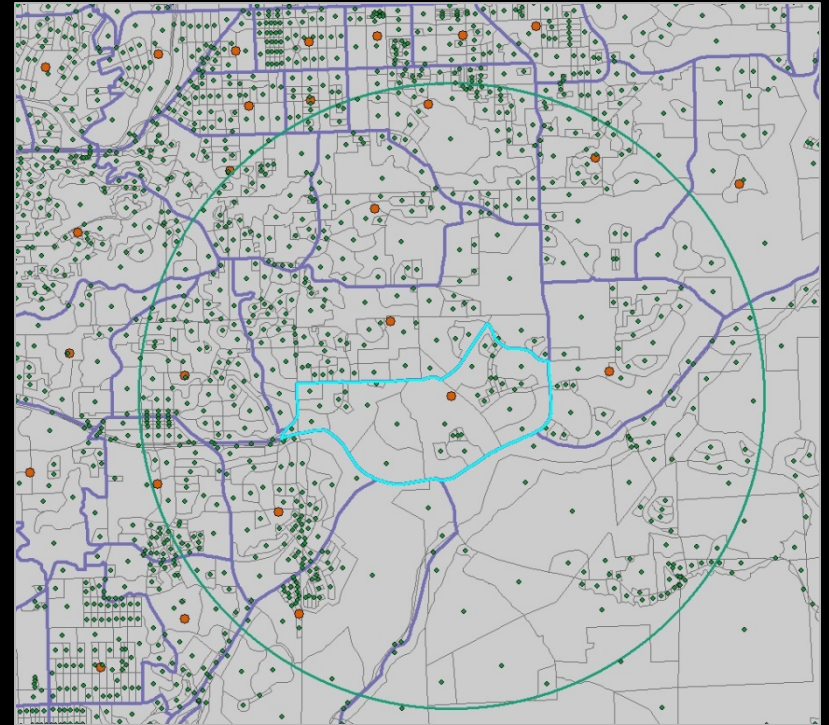
- Total Jobs, Housing
- Low-wage Jobs, Affordable rentals
- Affordable owned units
- Percent affordable and affordable deficit/surplus

mappingregionalchange.ucdavis.edu

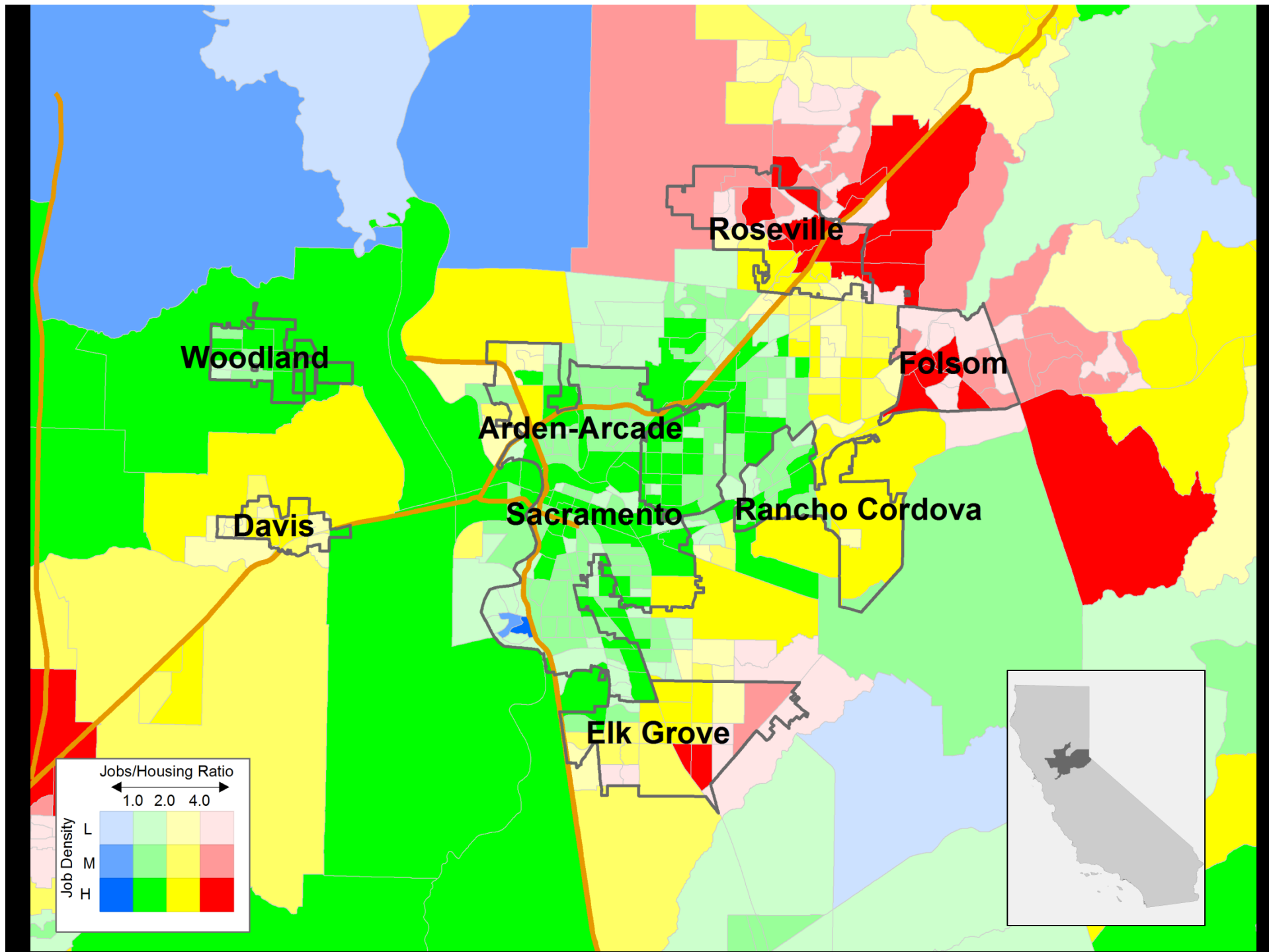
Tract/buffer level results

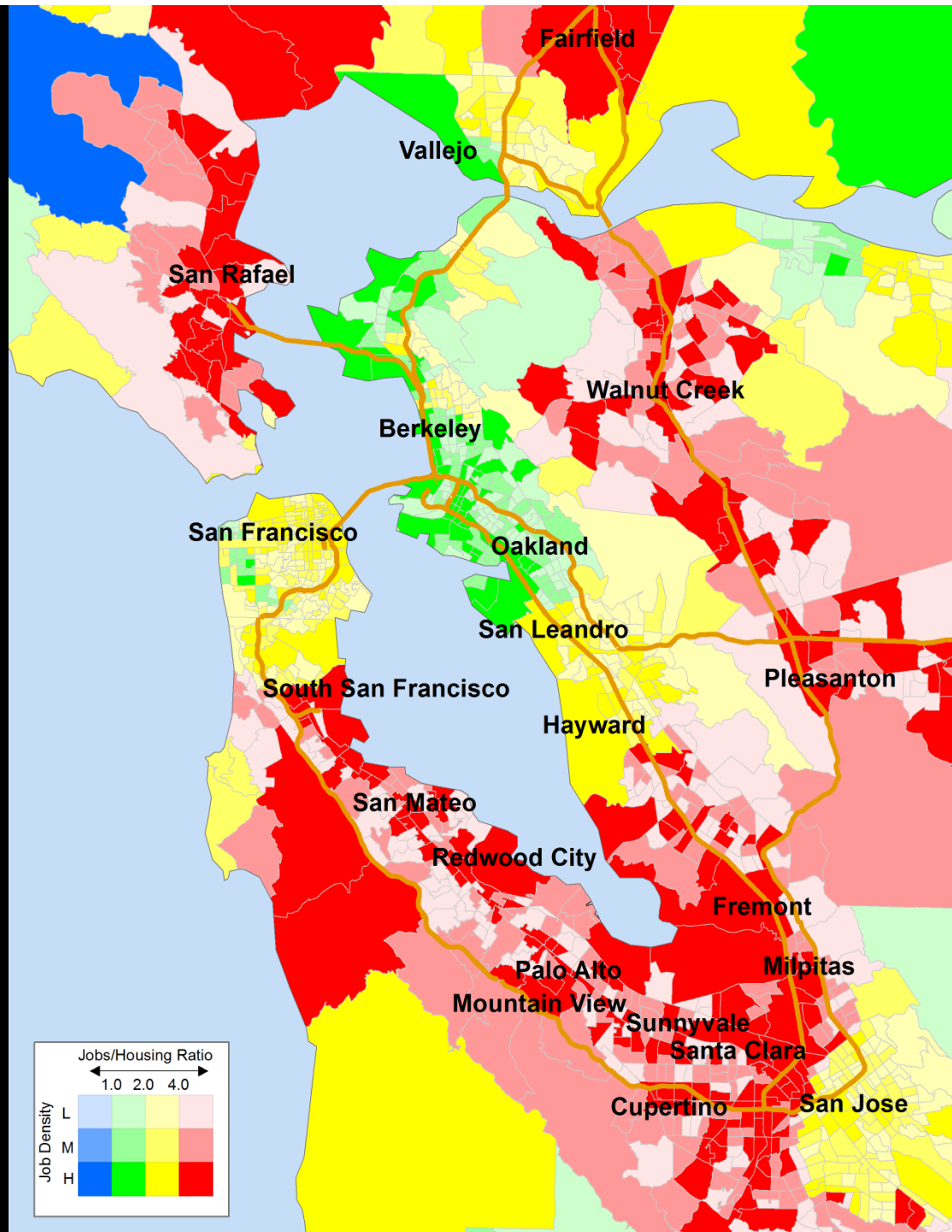
Buffer definition

- Sidestep problems with arbitrary jurisdictional boundaries
- Test different sizes using travel data
- Highlights small geographies with poor fit



Example buffer definition





VMT analysis

Bay Area VMT



- Data from activity-based microsimulation of daily travel patterns in 2010
- Allows analysis of low-wage VMT *attracted* to each zone

Bay Area VMT



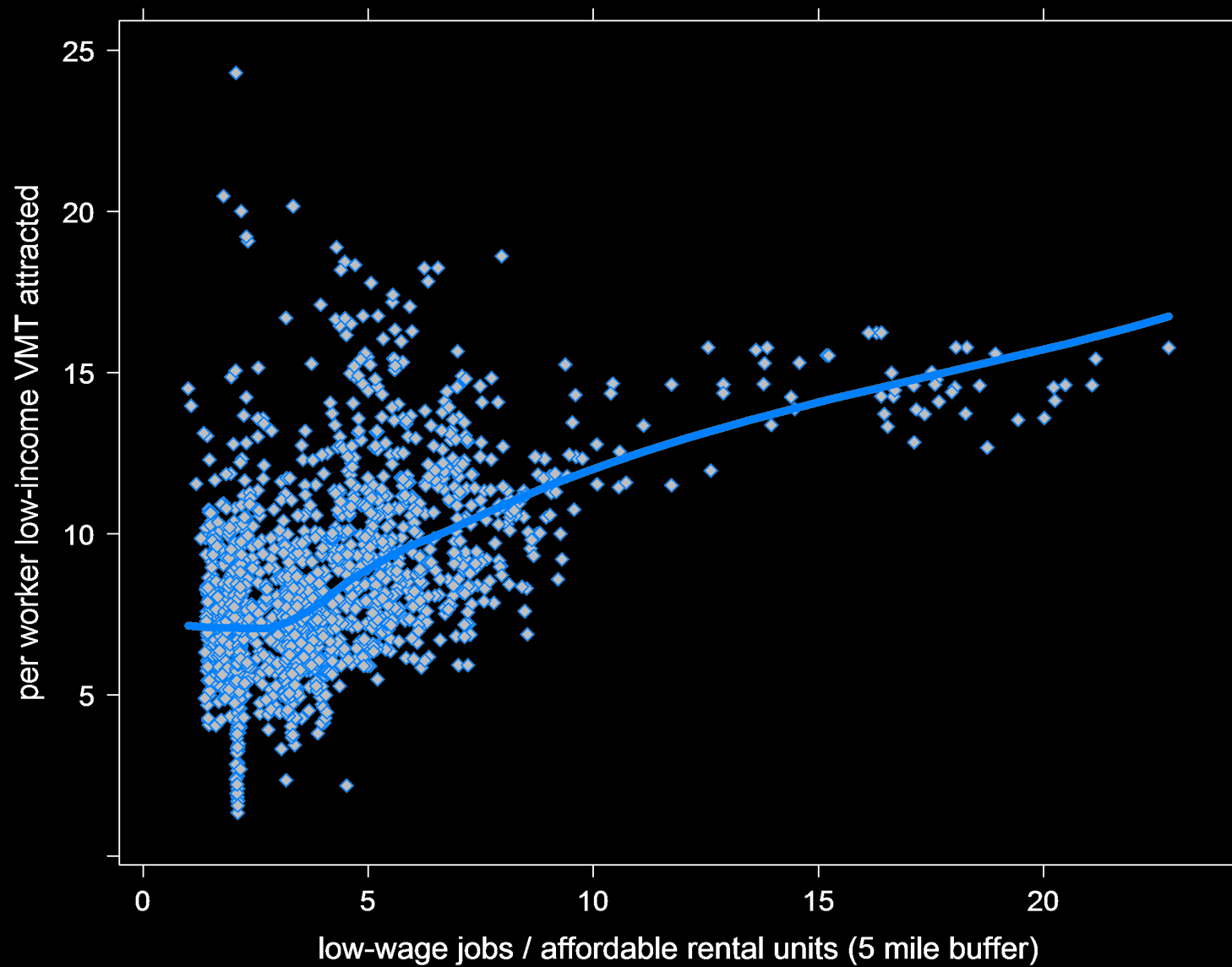
Total work VMT attracted = 49

Total workers = 3

Attracted work VMT per worker

$$= 49/3 = 16.3$$

Bay Area VMT



Bay Area VMT

Mean VMT attracted by JH fit category

JH fit category	1 – 2.2	2.2 – 4	> 4
Per worker VMT attracted	7.10	7.61*	10.4*

Bay Area VMT

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Potential travel savings from improving jobs-housing fit:
~1 million VMT/day

Conclusions

- Jobs-housing fit metric created using publicly available data
- Highlights areas where affordable housing is needed
- Linked to commute performance

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UCDAVIS

CENTER FOR REGIONAL CHANGE

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Data

- **Jobs**

- Longitudinal Employer-Household Dynamics
- <http://onthemap.ces.census.gov/>
- Any geography possible
- Low-wage \leq \$1250/month

- **Affordable rental units**

- American Community Survey
- Census Summary File 1
- Rent \leq \$750/month
- Margins of error (places vs. tracts)

California statewide VMT

- 42,431 households
- ~350,000 trips
- Data collection:
 - Telephone
 - Online
 - GPS
- Largest regional travel survey ever conducted



California Department of Transportation

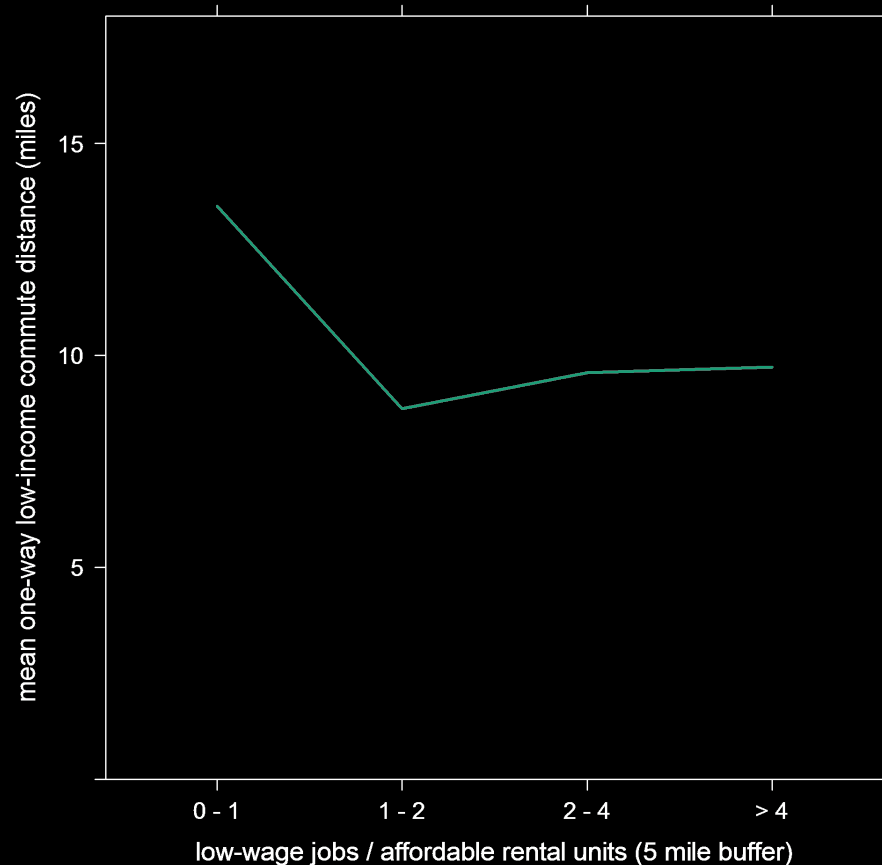
2010-2012 California Household Travel Survey Final Report

Version 1.0

June 14, 2013

http://www.dot.ca.gov/hq/tsip/otfa/tab/chts_travelsurvey.html

Commute distance



- All commute trips by low-income people
- Abundance of affordable housing linked with longer (distance) commutes

Model results

JH fit category	Coefficient	p-value
2.2 – 4	0.51	0.005
> 4	3.31	< 0.001

N = 1592, $R^2 = 0.24$