Tract-Level Geocoding Analysis: Identifying Communities With Low CalFresh Access

County Welfare Directors Association of California
Annual Conference - Anaheim, CA
October 8, 2014

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Presentation Outline

- CalFresh Access: Big picture overview
- CalFresh Access: As it is measured
- Geocoding: Looking below county levels at neighborhoods
- New proposed methodology for identifying “true hot spots” for targeted outreach efforts
- Highlight measurement issues uncovered
- Application of adjusted access measure

CalFresh Basics

Eligible to Receive CalFresh

Income Below Certain Thresholds

- **Gross income –** 130% of federal poverty guidelines/level (FPL). **Example: $2,008 per month for a household of three (2012).**

- **Net income -** income of less than 100% of FPL after certain deductions are applied. **Example: $1,545 per month for a household of three (2012).**

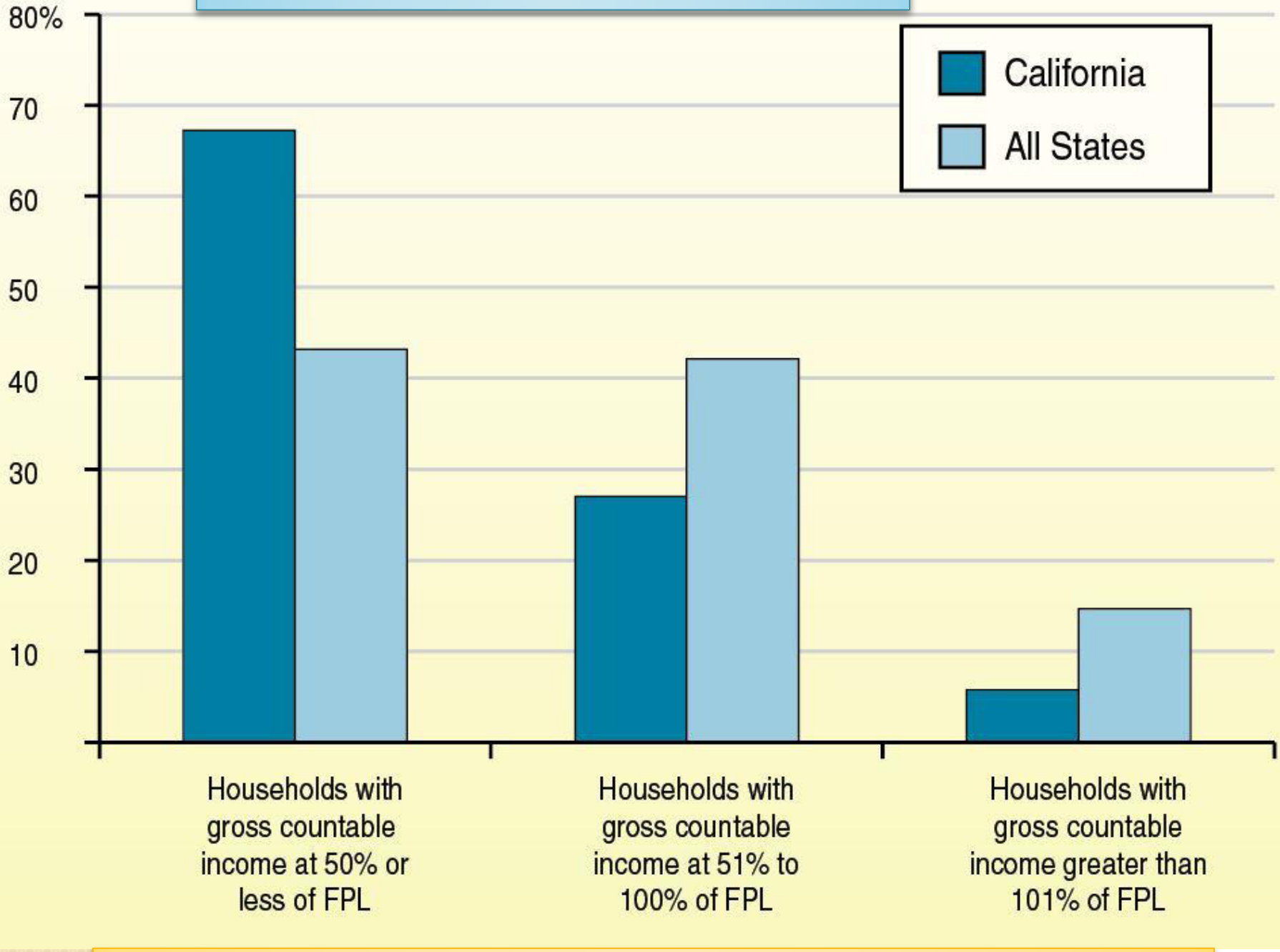
Additional Eligibility Criteria for College Students

Ineligible to Receive CalFresh

- ***Citizenship/Immigration Status – the largest group***
- ***Drug Felony Convictions (with certain exceptions)***
- ***Supplemental Security Income/State Supplementary Payment (SSI/SSP) Recipients - Due to "Cash-Out"***

Source: LAO March 2014

Income Distribution of SNAP Households



Source:: LAO

Measuring Program Access

The Program Access Index (PAI): USDA/Food and Nutrition Service (FNS)

$$PAI = \frac{CalFresh\ Participants - Disaster\ CalFresh\ Program\ Participants}{(Individuals\ with\ Income < 125\%\ of\ FPL) - FDPIR\ participants - SSI\ Recipients}$$

By this measure:

- **California's PAI was 2nd lowest in the country at 51% in 2012**
- **3.9 million eligible Californians are not receiving CalFresh**

FDPIR: Food Distribution Program on Indian Reservations

Source: FNS, *Calculating the Supplemental Nutrition Assistance Program (SNAP) Program Access Index: A Step-by-Step Guide*, February 2014

Measuring Program Access (continued)

Questions about the PAI

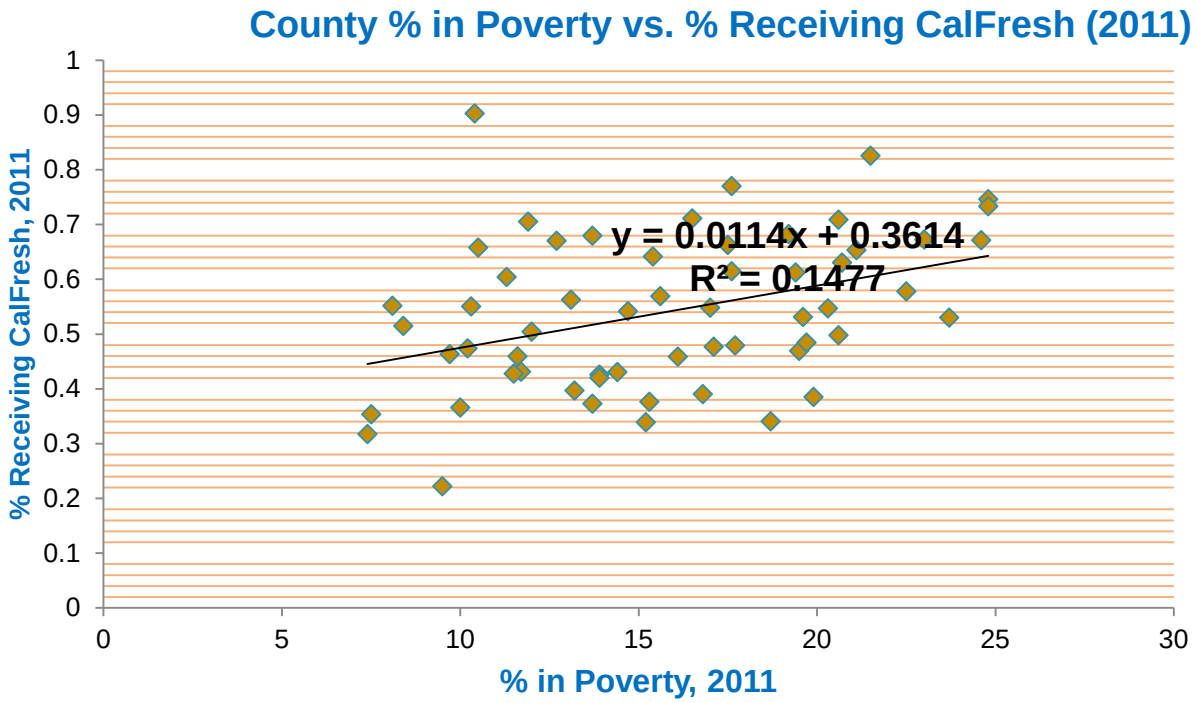
- Why is participation so low in California?
- How does program access vary among counties?
- Does variation among counties relate to local unemployment rates? Local poverty rates? A rural/urban divide?
- Is the PAI the best way to measure program access?
  - In particular, does the PAI's denominator accurately capture the eligible population? (income below 125% of FPL – FDPIR – SSI)

FDPIR: Food Distribution Program on Indian Reservations

The Search for Answers

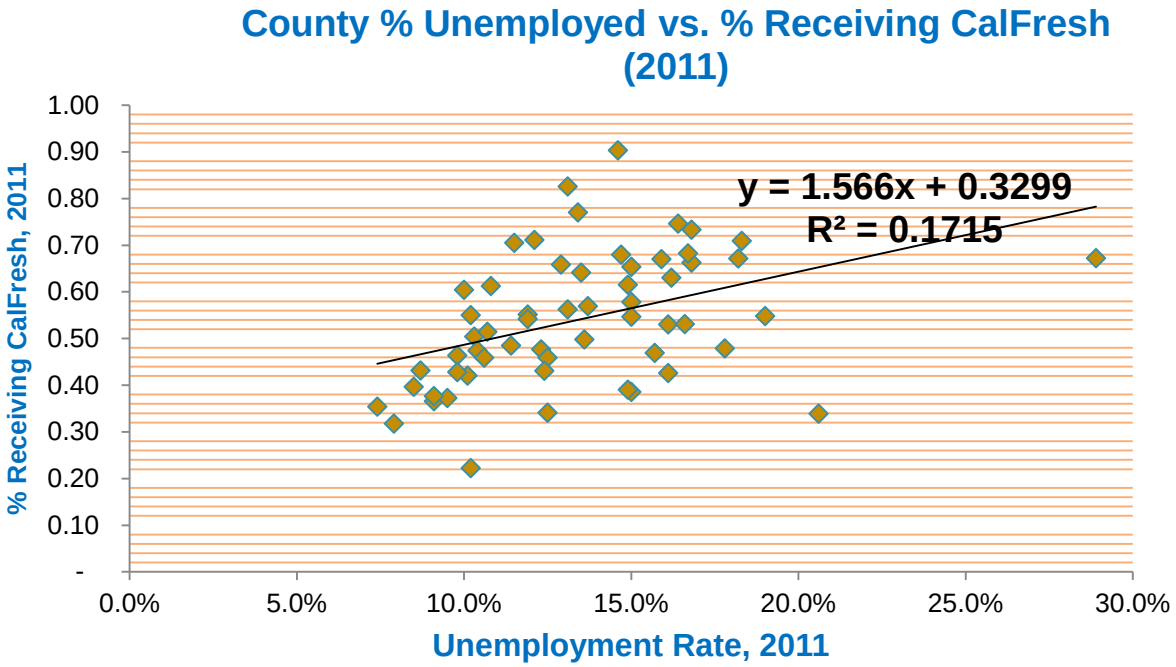
What sub-county-level geographies should be used to identify areas of low participation?

- Counties' unemployment rates and poverty levels are not good predictors of CalFresh access.



Source: Poverty rates, American Community Survey; percent receiving CalFresh, CDSS

The Search for Answers (continued)



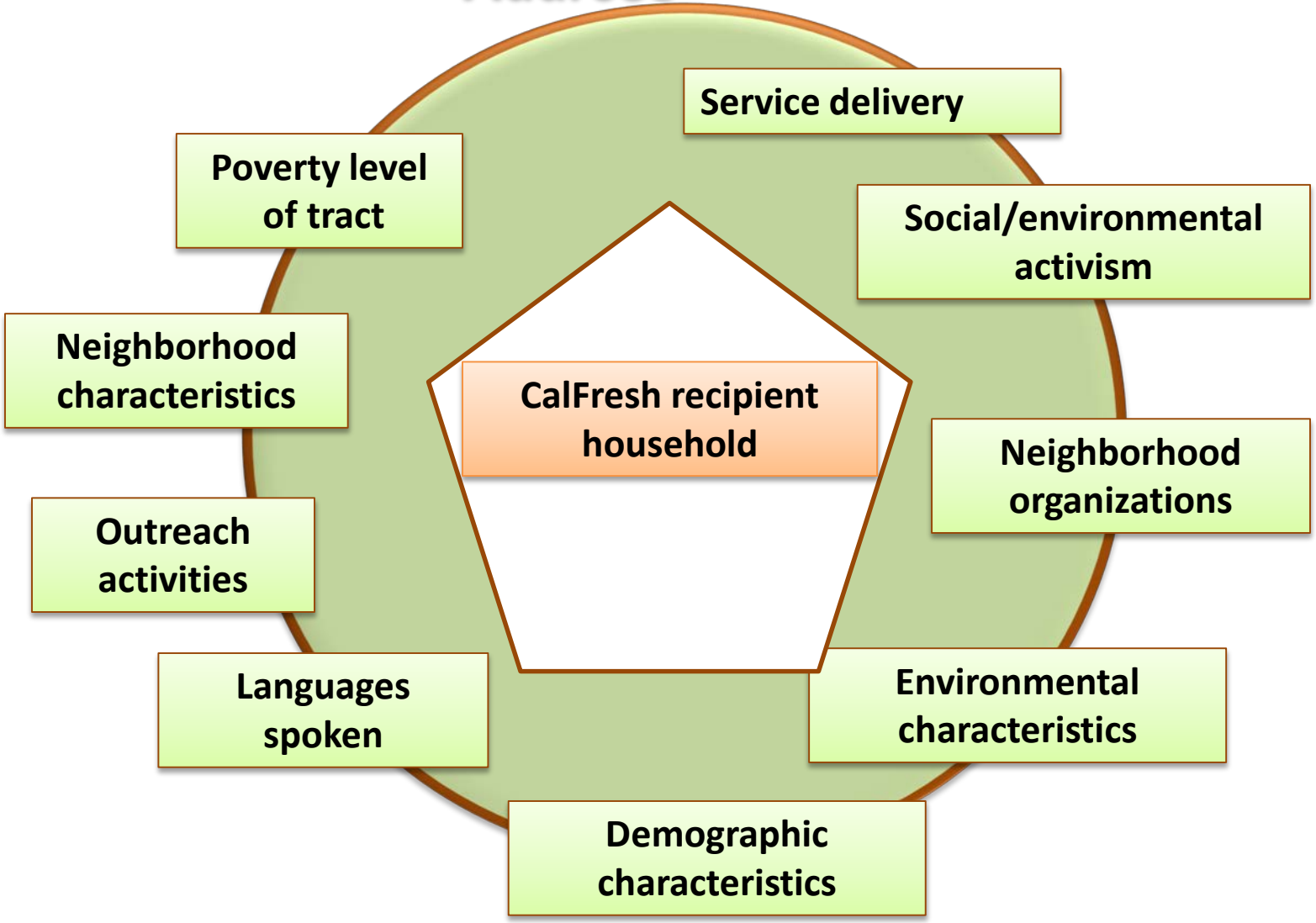
- **The distribution of proportions of non-English speakers points to:**
  - **Language as an important factor**
  - **The possible role of immigration status**
  - **The need to develop a program access measure that takes citizenship status into account**

Source: Unemployment rates, EDD; percent receiving CalFresh, CDSS

The Context for Our Research

- **Socio-economic indicators at the county level rarely explain differences in CalFresh access.**
- **Explanations for county-level variation exist at below-county levels – neighborhoods and communities.**
- **Need local-level data and tools to understand neighborhood- and community-level effects.**

Geocoding Helps Us Gain a Holistic View of the Environments Surrounding Each CalFresh Recipient Address



Geocoding Mapping Analytics

Geocoding allows us to:

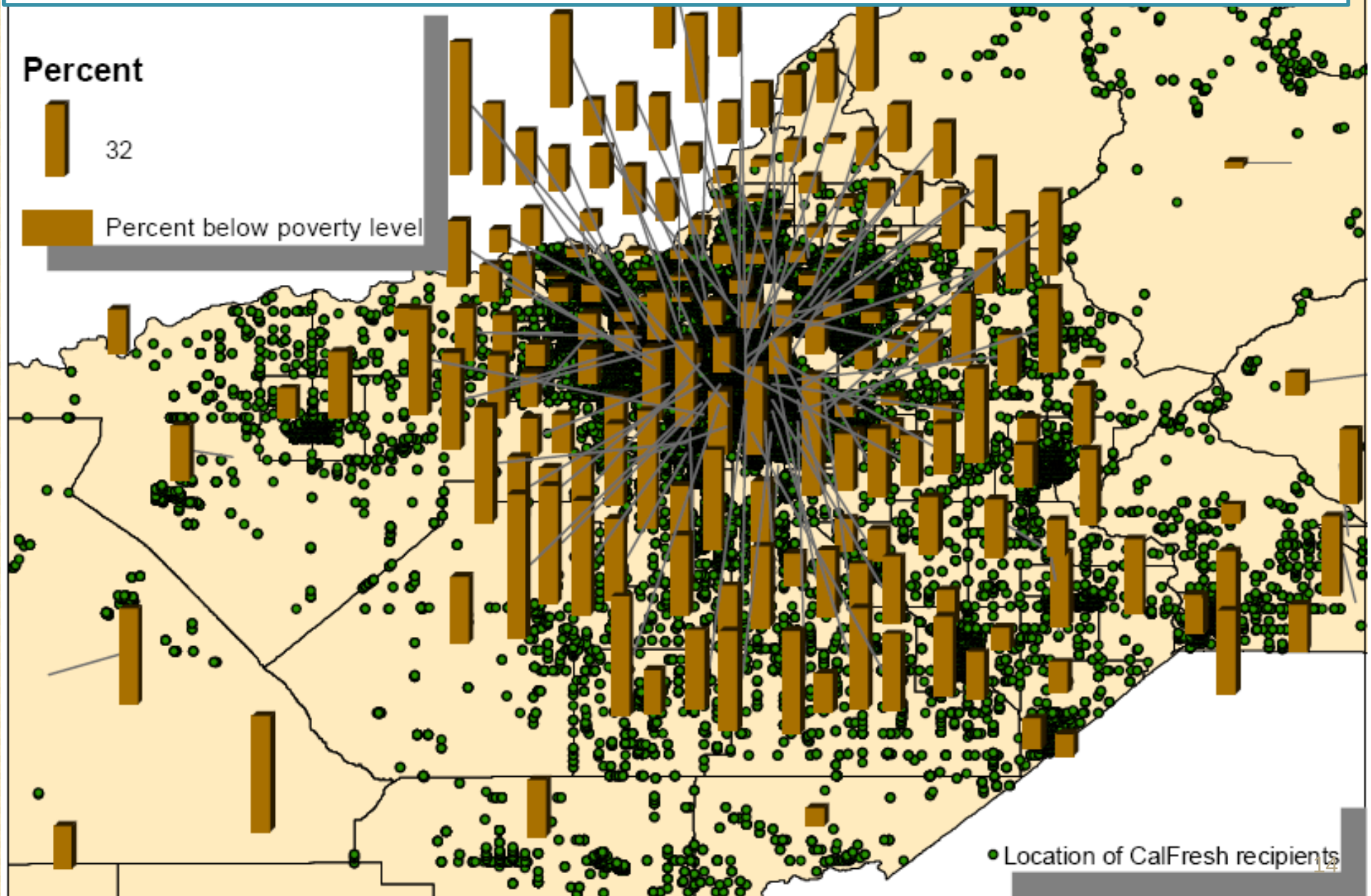
- **Map recipient-level data and local poverty rates.**
- **Examine differences in CalFresh access at below-county levels, such as zip codes and census tracts.**
- **Identify where potential CalFresh eligibles live.**
- **Highlight population subgroups with lower-than-expected CalFresh access based on poverty levels.**
- **Identify local areas where targeted outreach may be effective.**

Examples of Geo-Mapping Applications

Over two hundred **tract-level** data elements are linked to each dot.

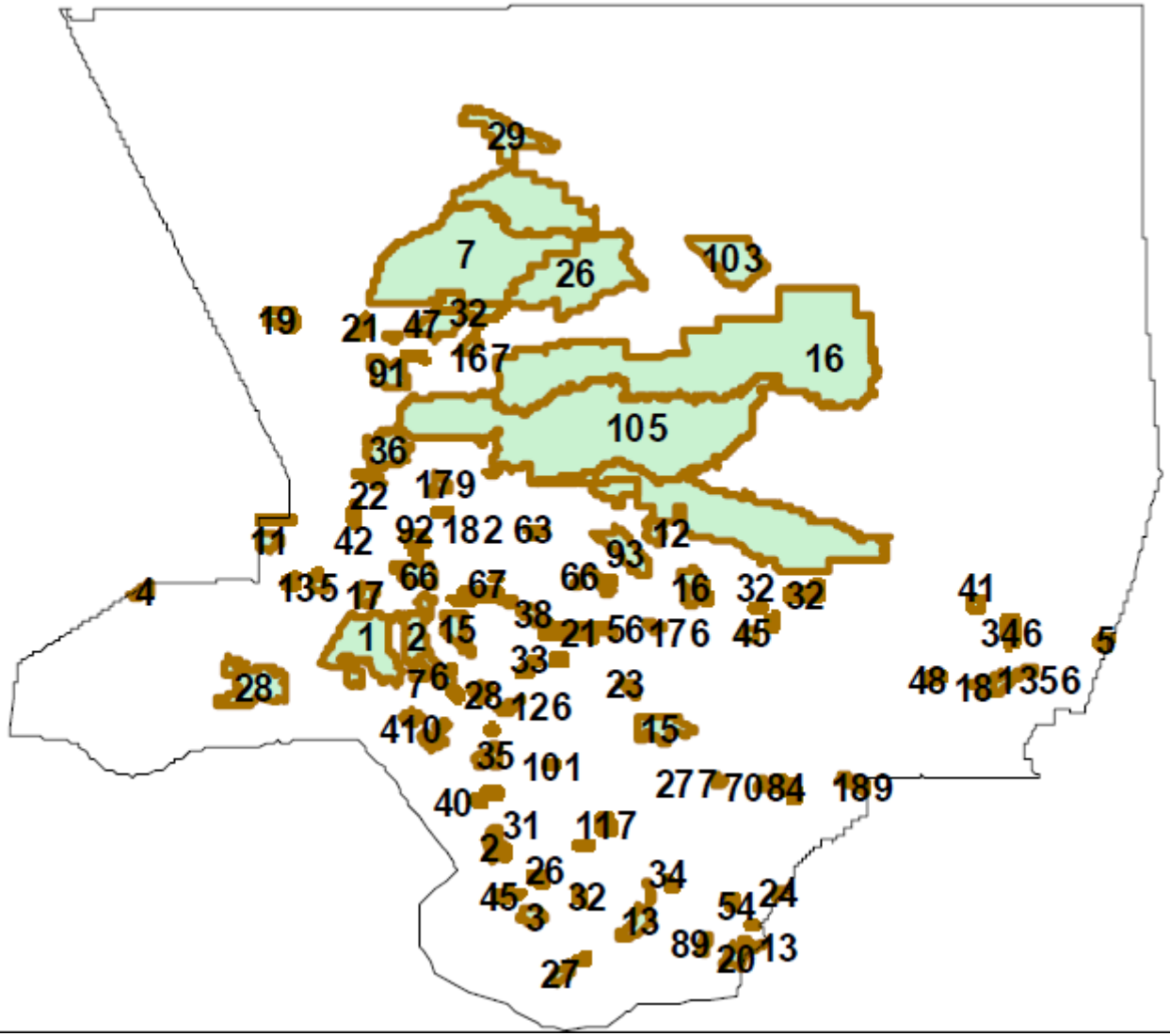
- Total tract population
- % below poverty level
- % non-native
- Number of Latinos
- Number of families with children under 18
- Number of female-headed households
- % speaking languages other than English
- EBT access

Mapping Census Tract Poverty Levels Against CalFresh Recipient Addresses (Fresno County, July 2013)

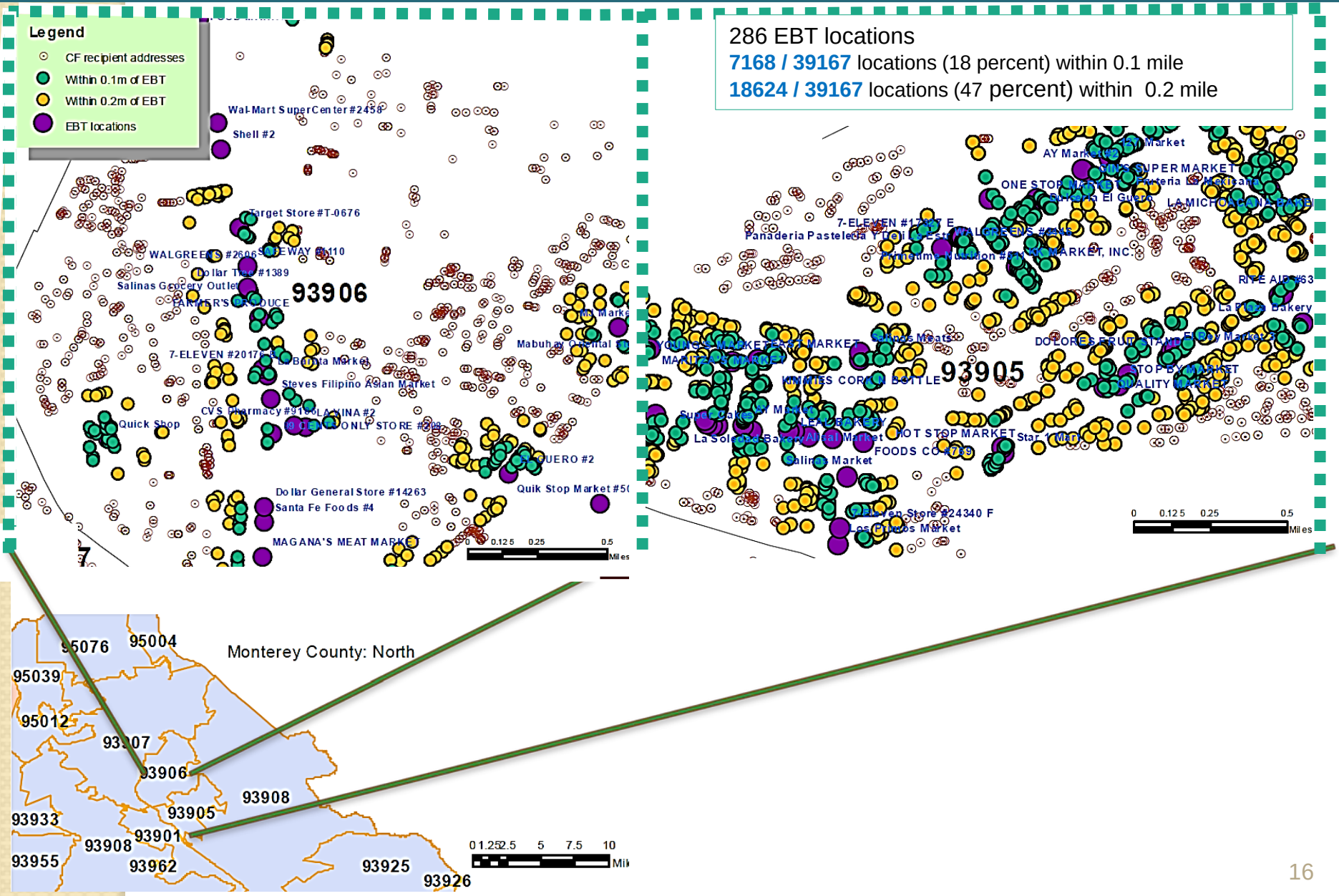


Identifying Data Problems

LA County: Number of CalFresh Recipients in Tracts with Reported Zero Poverty Levels (American Community Survey)



Comparing the Distance Between CalFresh Recipients and EBT Locations in Adjacent Zip Codes (Monterey County)



Developing a Better Measure of Program Access

FNS: Program Access Index (PAI)

$$PAI = \frac{(\text{CalFresh Participants}) - (\text{Disaster CalFresh Program Participants})}{(\text{Individuals with Income} < 125\% \text{ Poverty Threshold}) - (\text{FDPIR Participants}) - (\text{SSI Recipients})}$$

CDSS: Program Reach Index (PRI) *

$$PRI = \frac{Census\ Tract\ CalFresh\ Participants}{(Tract\ pop\ size \times Tract\ poverty\ proportion \times 1.3) - (SSI * \frac{1}{2})}$$

*** Geography-based or population-based**

Advantages of Using PRI

- Reflect true CalFresh poverty threshold (130%)
- Correct share of SSI/SSP recipients to subtract from denominator
- Measure CalFresh access below county levels
- Measure differences in access among population subgroups
- Use results to devise targeted CalFresh outreach activities
- Help uncover the limitations of PAI as a measurement methodology.

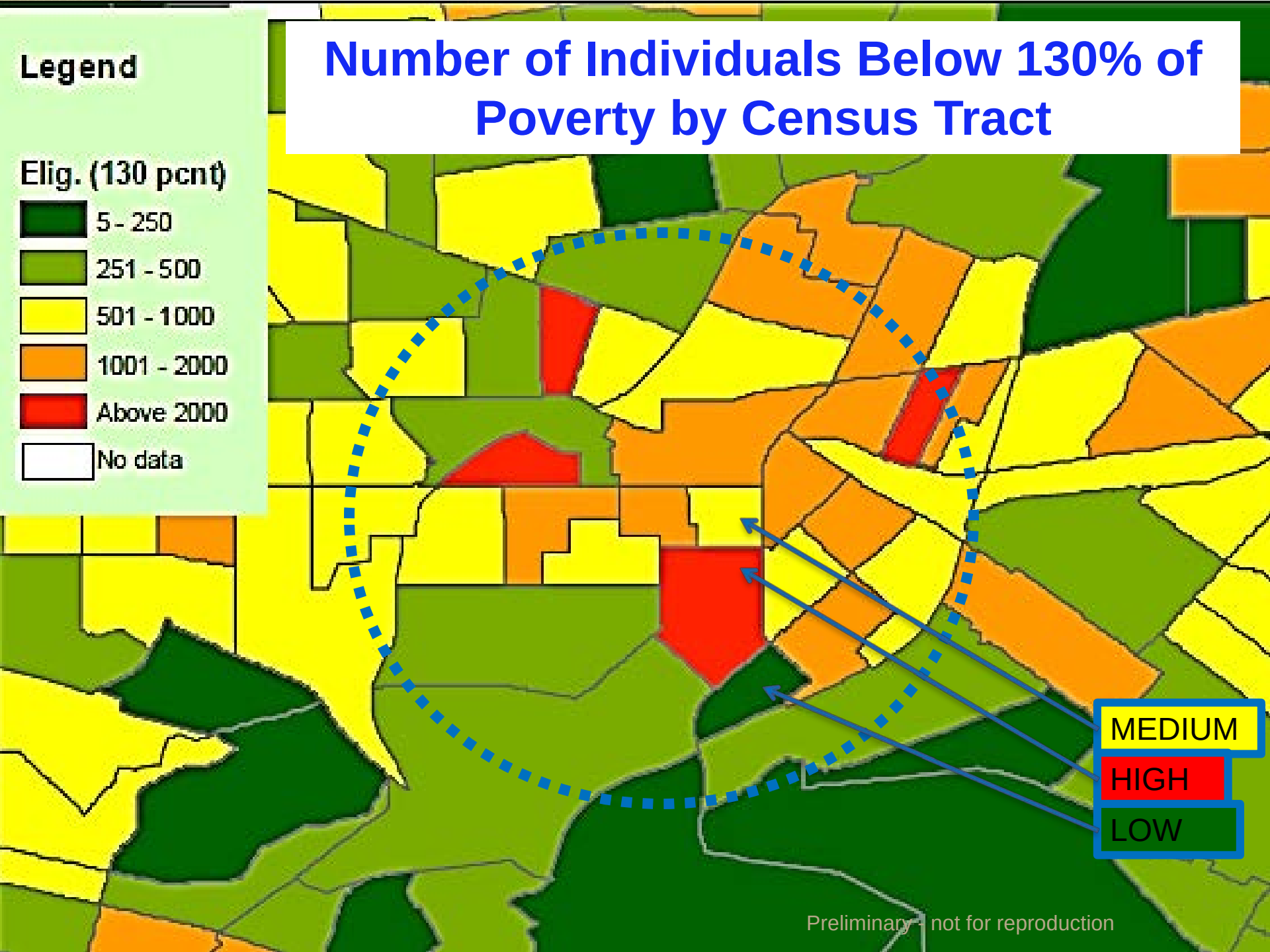
Application Example:
LA County Census Tracts

Potential Eligibles
(Below 130% of Poverty)

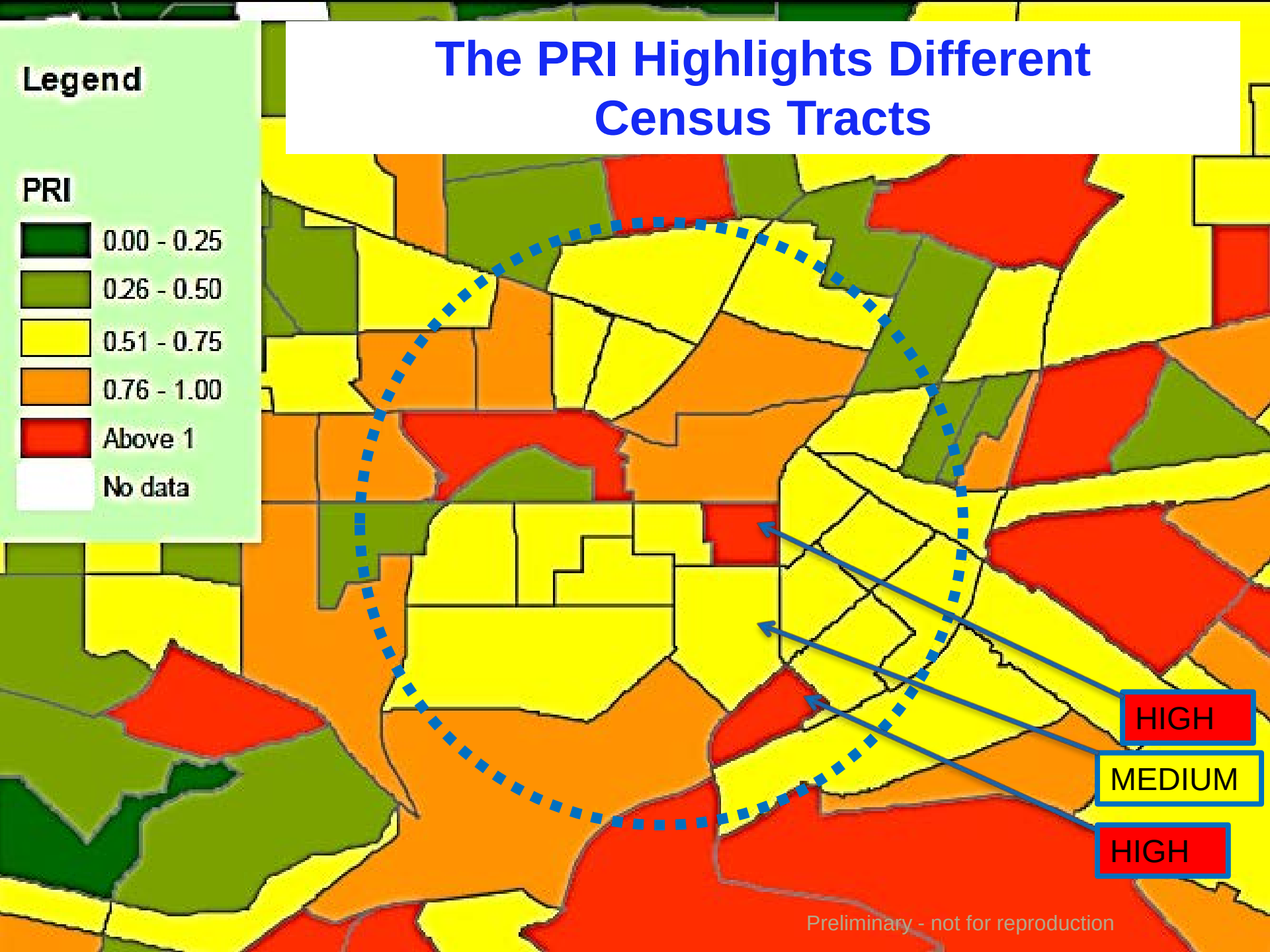
vs.

CalFresh Access – PRI

Number of Individuals Below 130% of Poverty by Census Tract



The PRI Highlights Different Census Tracts

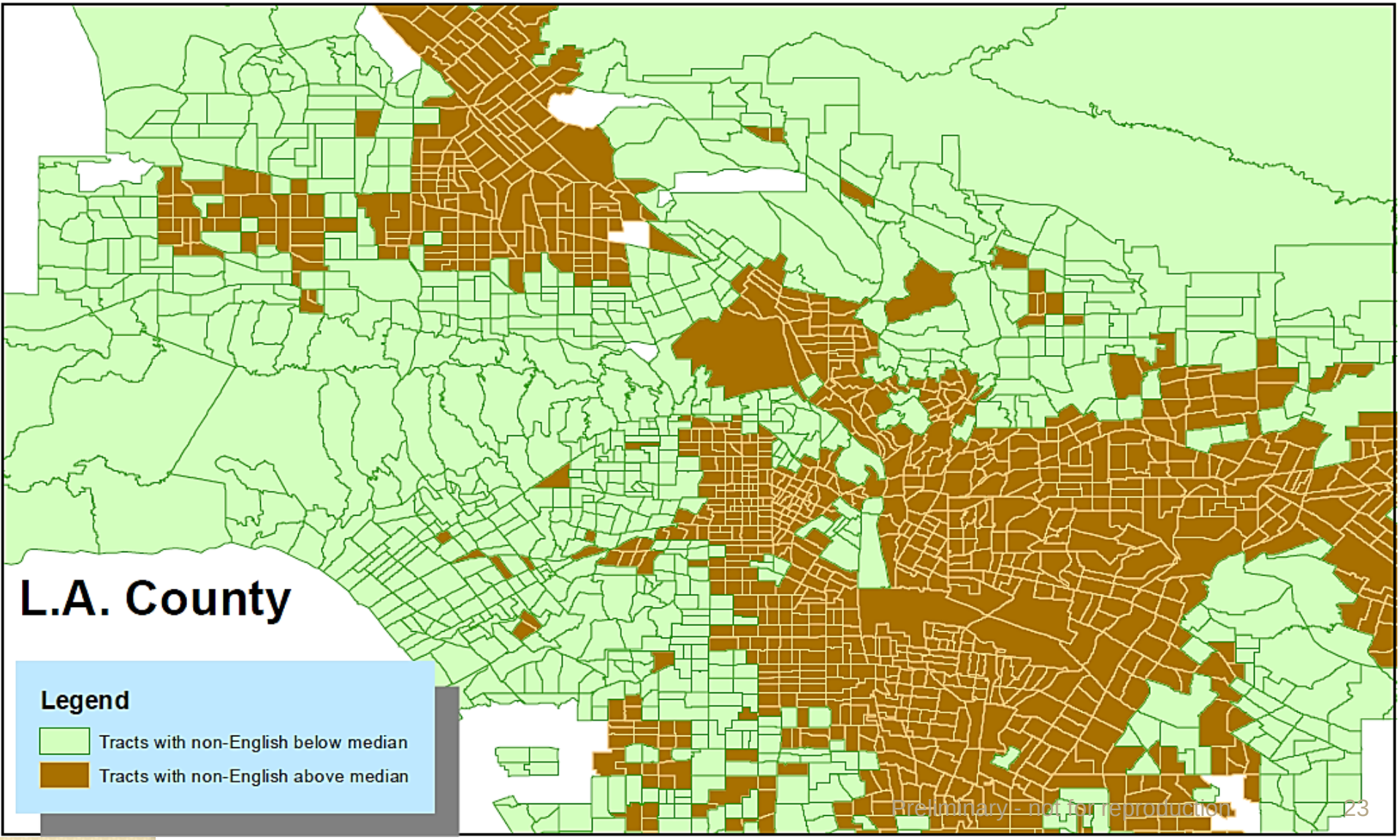


Application Example:
LA County Census Tracts

The Connection Between Poverty and Language

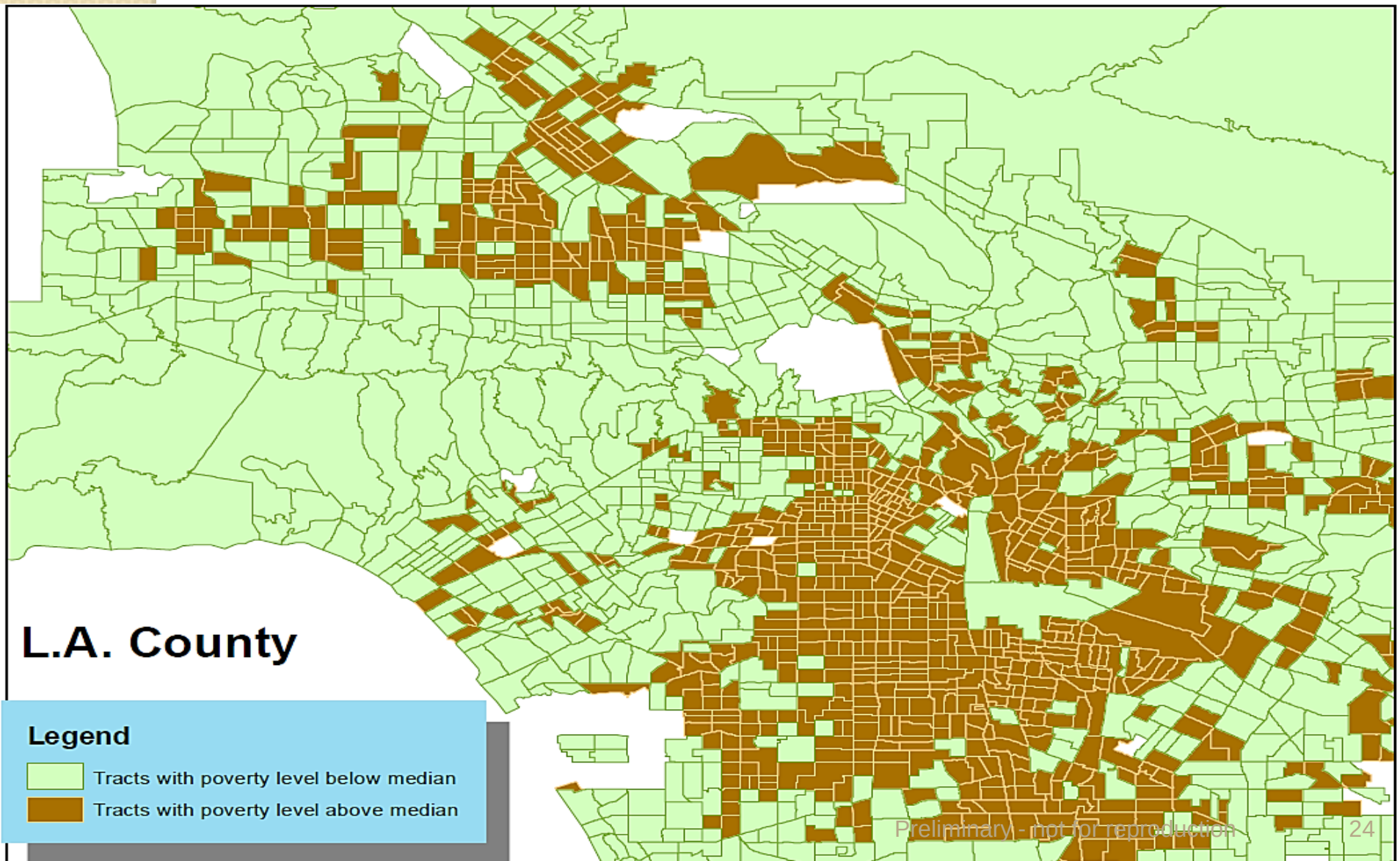
Percent Speaking Languages Other Than English by Position Above or Below Median

(Median = 58.3)

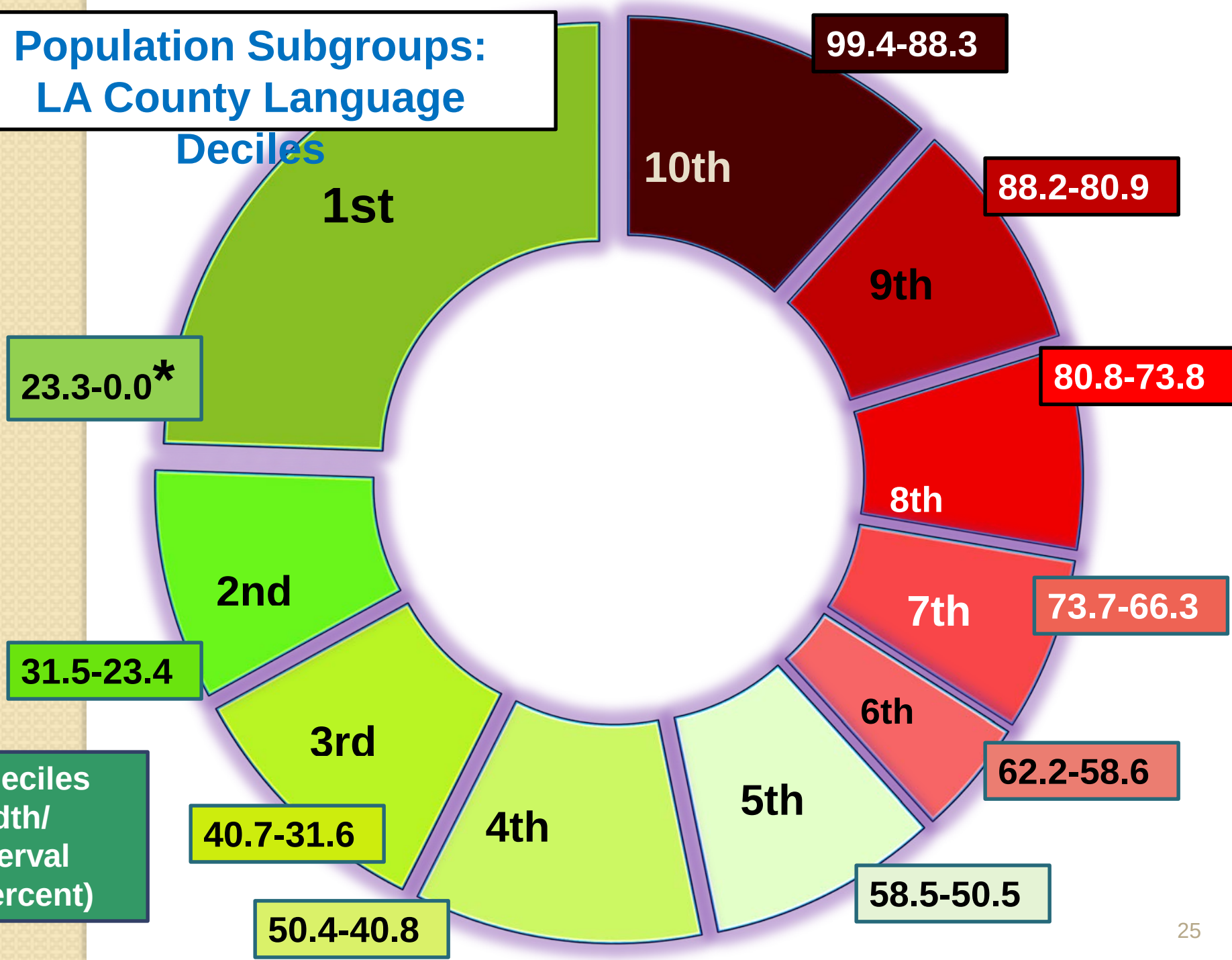


Percent Below Poverty
by Position Above or Below Median

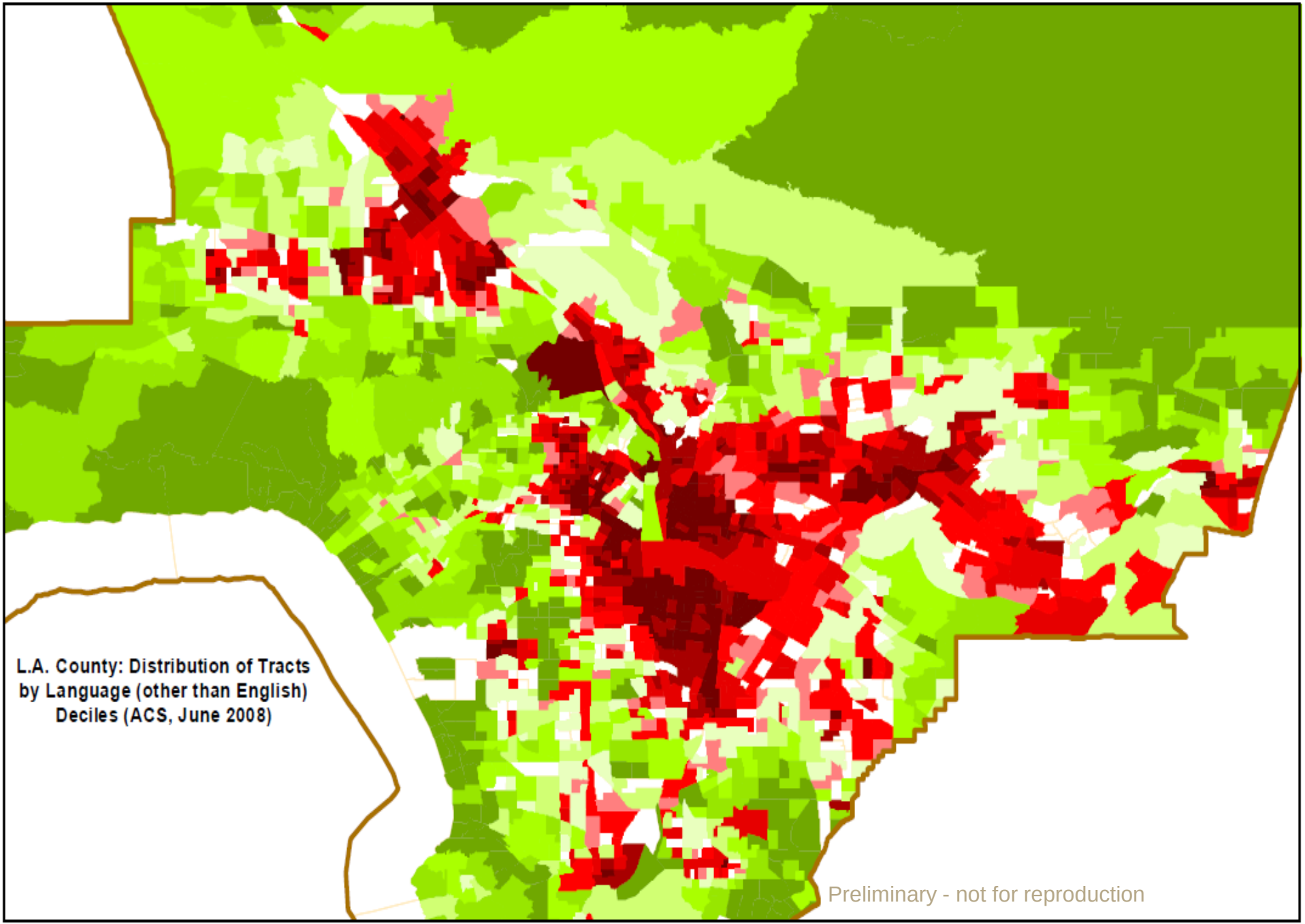
(Median = 11.2)



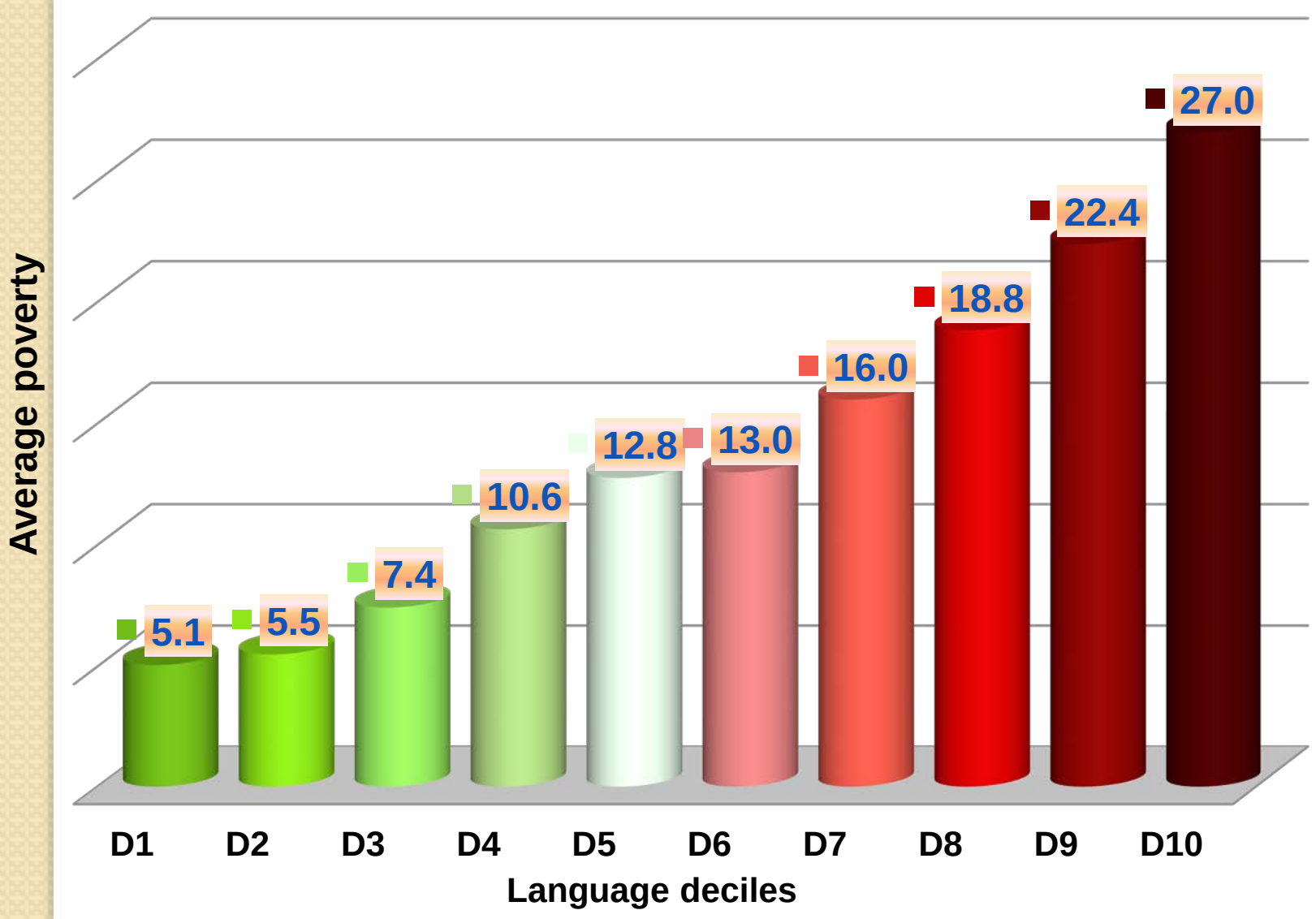
Population Subgroups: LA County Language Deciles



* Deciles width/ interval (percent)


L.A. County: Distribution of Tracts
by Language (other than English)
Deciles (ACS, June 2008)
Preliminary - not for reproduction

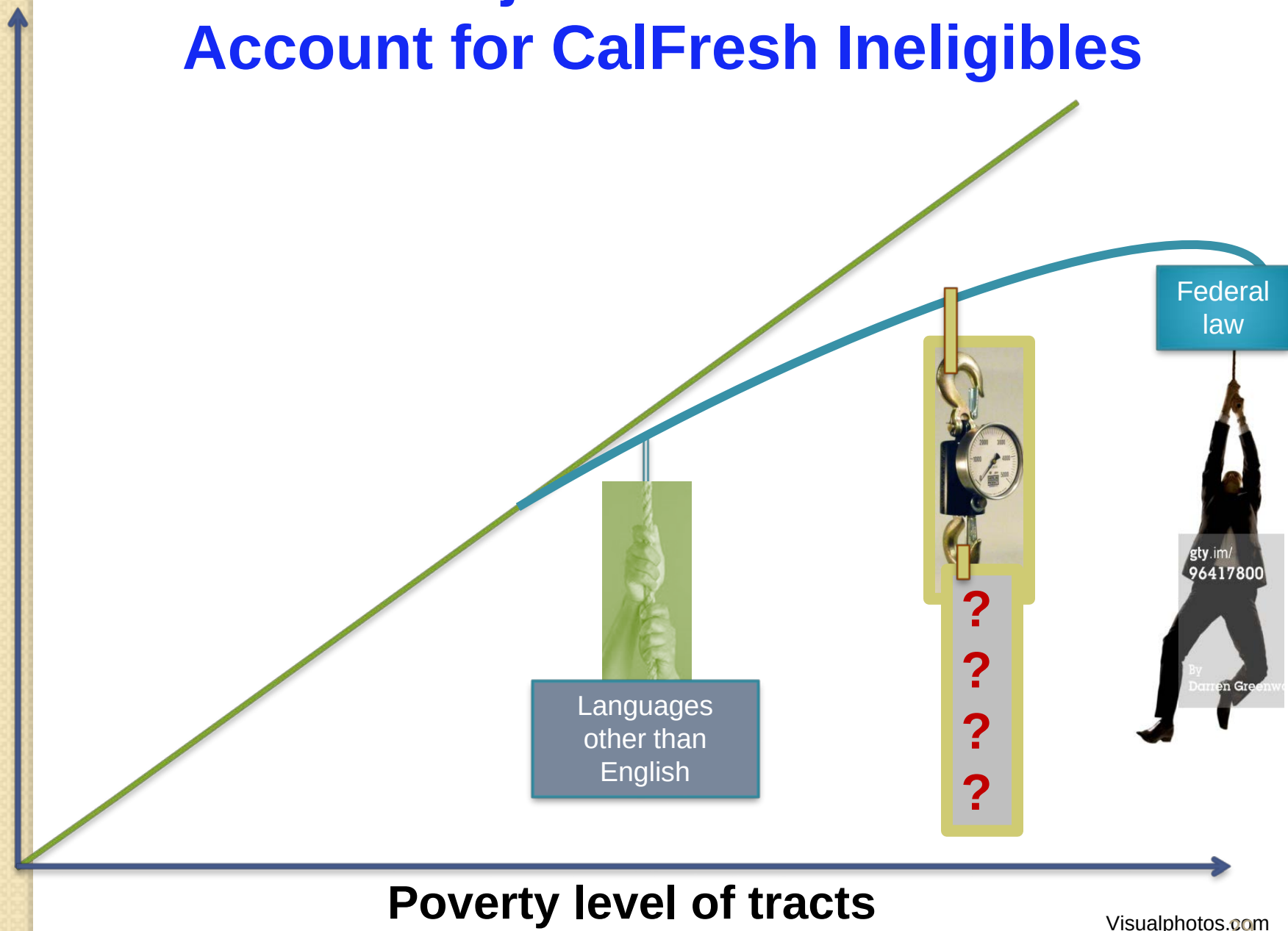
L.A. County: Average Poverty Level Tract by Language (Other than English) Deciles



Some observations so far

- **The Program Reach Index (PRI) is as useful an indicator of CalFresh access at the county level as the Program Access Index (PAI).**
- **The ability to apply PRI at below-county levels makes it much more valuable in assessing CalFresh reach at community and neighborhood levels.**
- **The PRI can help target outreach activities through mapping techniques that highlight areas needing benefits the most.**
- **HOWEVER, does it help us in identifying "true hot spots" where outreach efforts should be targeted?**

Additional Adjustments are Needed to Account for CalFresh Ineligibles



Visualphotos.com

Estimating the Number of Undocumented Ineligibles: Child-Only Methodology (Adjusted PRI or APRI)

The Child-Only Method

The child-only method is an indirect method of accounting for persons who are ineligible to receive CalFresh due to their citizenship status.

Child-Only CalFresh households are households in which all CalFresh participants are minors and all adults:

- **receive SSI/SSP;**
- **are convicted of certain drug-related felonies; or**
- **are undocumented immigrants**

These adults should be deducted from the program access denominator.

The Child-Only Method (continued)

Three data points to estimate:

1. What proportion of child-only households are headed by parents/adults who are ineligible to receive CalFresh due to their citizenship status?

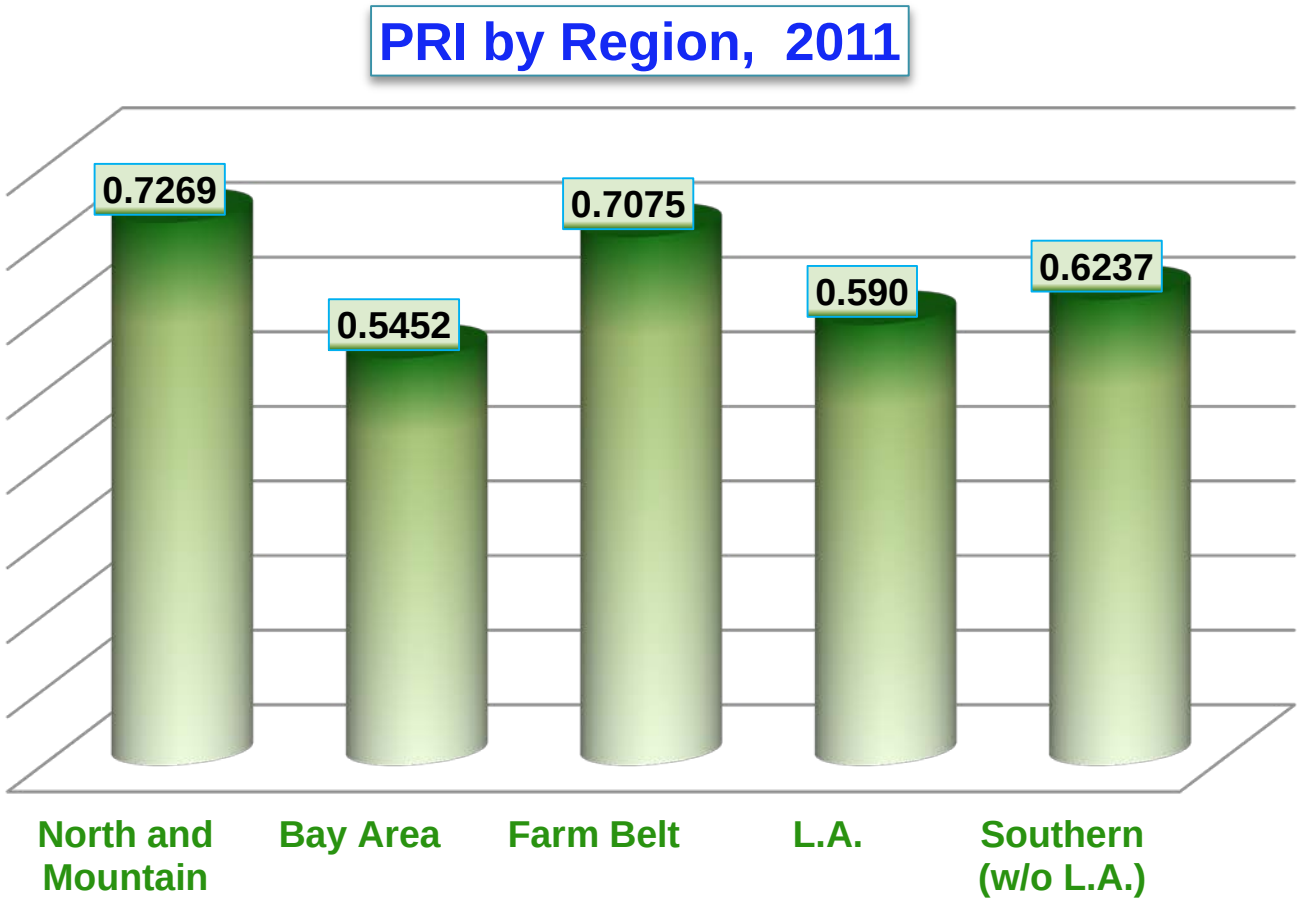
2. How many undocumented adults live in these child-only households?

3. How many undocumented adults live in households where there are no children?

$$\text{APRI} = \frac{\text{CalFresh Recipients} - \text{Disaster CalFresh Program Participants}}{(\text{pop} < 130\%\ \text{FPL}) - \left(\text{SSI} * \frac{1}{2}\right) - (\text{ineligible undocumented adults})}$$

The Child-Only Method (continued)

Assume Northern/Mountain California has the smallest share of undocumented immigrants



Definition of regions follows Thomas MaCurdy, Mancuso and Margaret O'Brien-Strain, *The Rise and Fall of California's Welfare Caseload: Types and Regions, 1980–1999*, Public Policy Institute

The Child-Only Method

According to administrative data on CalFresh recipients, of all Child-Only CalFresh households in the Northern and Mountain counties:

- An average (median) of 6% are child-only due to non-immigration causes
- An average (median) of 94% are due to adults' immigration status

The Child-Only Method (continued)

State-level data shows that the average household with undocumented adults and at least one child has 1.77 adults.

Undocumented Households with Children			
Number of households (000s)		Adults per household	Total adults
2-parent	507	2	1,014
1-parent	155	1	155
Other	9	2	18
Total	671		1,187
Average			**1.77**

Source: Karina Fortuny, Randy Capps and Jeffrey S. Passel, *The Characteristics of Unauthorized Immigrants in California, Los Angeles County, and the United States*, The Urban Institute, March 2007.

The Child-Only Method (continued)

The same data show that for every 177 undocumented adults residing in household with children, there are 124 undocumented persons residing in households without children.

Undocumented Households without Children			
Number of households (000s)		Persons per household	Total persons
Married couple	118	2	236
Other families	29	3	87
Solo adult men	435	1	435
Solo adult women	137	1	137
Total	719		895
Average			**1.24**

The Child-Only Method (continued)

$$\text{APRI} = \frac{CalFresh\ Recipients - Disaster\ CalFresh\ Program\ Participants}{(pop < 130\%\ FPL) - \left(SSI * \frac{1}{2}\right) - (0.94\ \text{child-only households} * 1.77 * 1.7)}$$

Example of the Child-Only Method

Number of Ineligible Undocumented Adults

Objective	Calculation	Result
Number of child-only CalFresh households, Fresno County, 2011		15,136
Number of households that are child-only due to the parents' citizenship status	$15{,}136 \times 0.94$	14,228
Number of poor undocumented adults residing in child-only households	$14{,}228 \times 1.77$	25,184
Total number of poor undocumented adults (in households with children and households without children)	$25{,}184 \times (1 + (124/177))$	42,827

Validation of the Total Number of Undocumented Persons

Objective	Calculation	Result
Fresno's poverty rate relative to the statewide average	$23.4 \div 15.07$	1.55
Estimate the number of undocumented persons in Fresno that are CalFresh-poor (130% FPL or below) for every 100 undocumented persons in the county	1.55×32.5*	50.5
Estimate the total number of undocumented persons in Fresno County	$42{,}827 \times (100/50.5)$	84,806

Comparison: Child-Only Method and PPIC Method

Total Number of Undocumented Persons, 2011				
County	Child-Only Households	Undocumented (130% FPL)	Child-Only	PPIC
Los Angeles	119,837	338,954	964,501	916,000
Orange	29,734	84,101	258,774	289,000
San Bernardino	21,870	61,858	179,320	150,000
San Diego	17,967	50,819	156,366	198,000
Riverside	17,706	50,081	154,095	146,000
Fresno	15,136	42,812	84,858	49,000
Santa Clara	13,468	38,094	117,211	180,000
Kern	11,845	33,503	72,614	46,000
Sacramento	11,260	31,848	97,995	65,000
Alameda	10,808	30,570	94,062	124,000
Statewide	356,627	1,008,705	2,864,504	2,874,500

Source for PPIC estimates: Laura E. Hill and Hans P. Johnson, *Unauthorized Immigrants in California: Estimates for Counties*, July 2011.

The Child-Only Method vs. PPIC's method

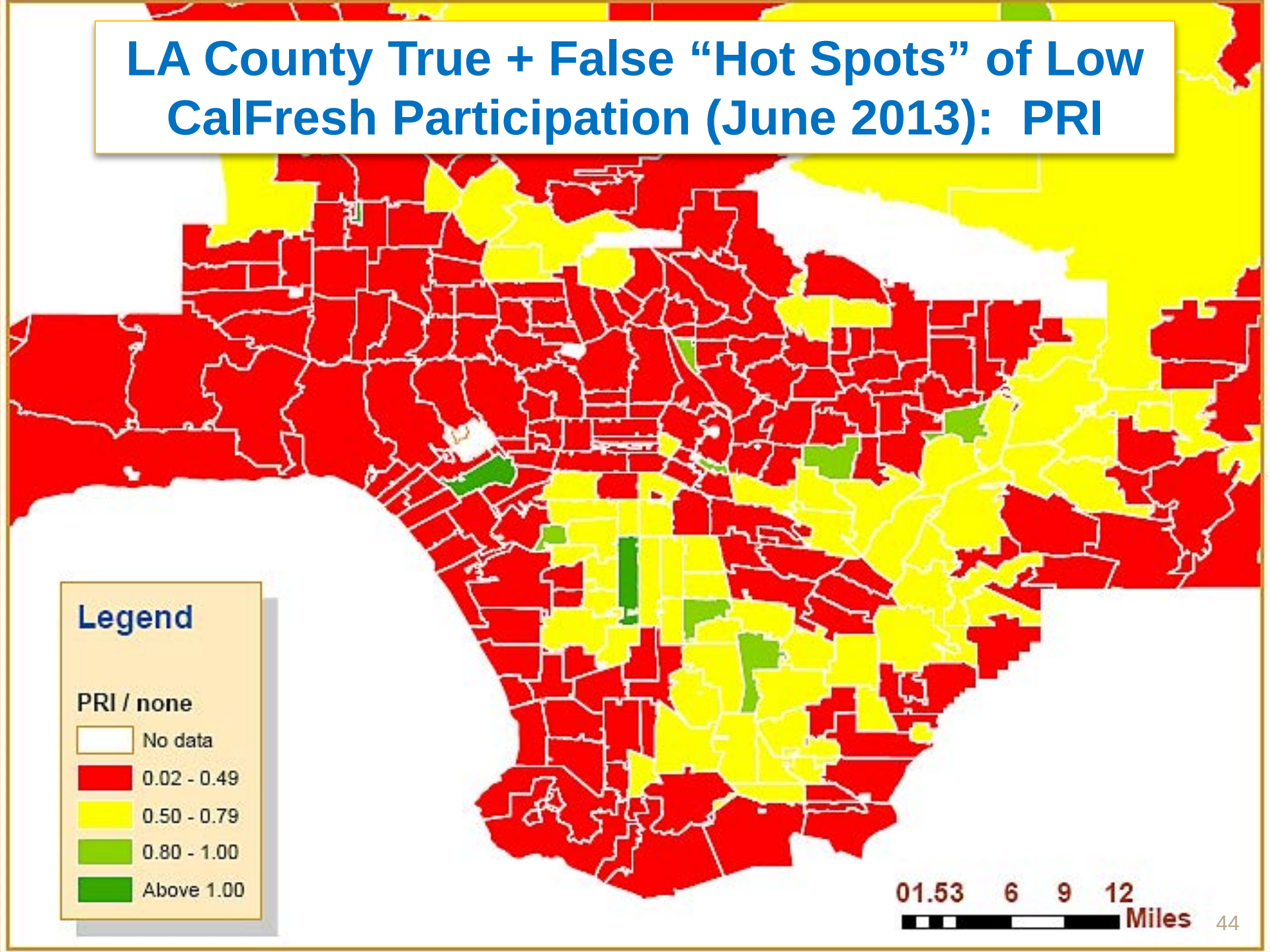
- The Child-Only Method (poverty-based) appears to give a better estimate of undocumented persons than PPIC's:
  - for counties with higher poverty level than the statewide average
  - in general, for counties where agriculture is the predominant economy
- The PPIC method (tax-return-based) appears to give a better estimate of undocumented persons than the Child-Only method:
  - for counties with lower poverty level than the statewide average
  - for counties with predominantly non-agricultural economies

SUMMARY: Statewide PAI Gain Using Different Estimates

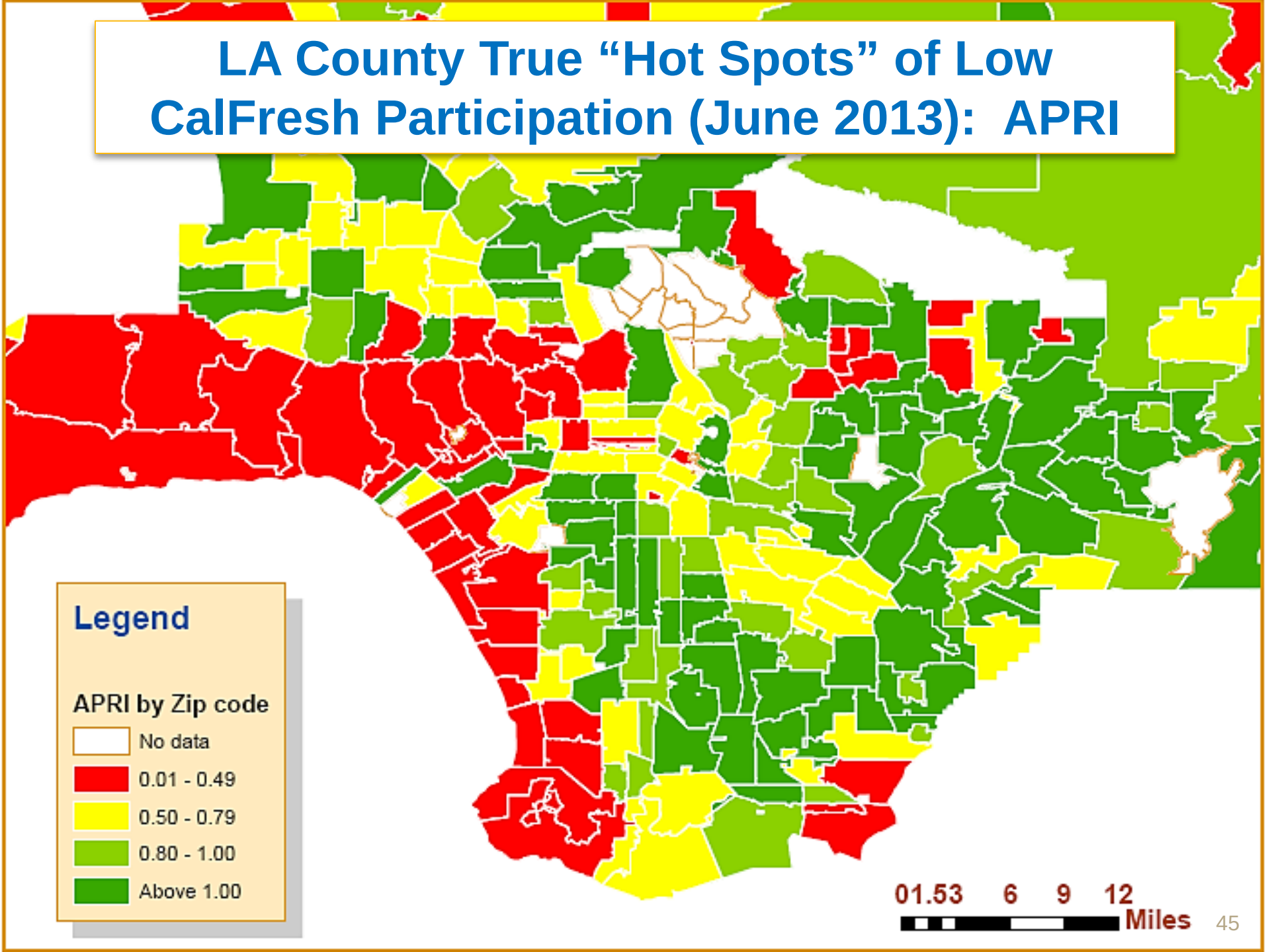
Statewide Program Access Under Four Scenarios		Numerator 2011	Denominator 2011	% Receiving	%age Point Gain
FNS	FNS (2011)	3,760,866	7,684,310	**49**	--
Adjusted Program Reach Index - APRI					
Child-Only	0.94 x 356,627	3,760,866	7,349.091	**51**	**2**
Urban Institute	0.94 x 356,627 x 1.77	3,760,866	7,090,954	**53**	**4**
	0.94 x 356,627 x 1.77 x 1.70	3,760,866	6,675,605	**56**	**7**

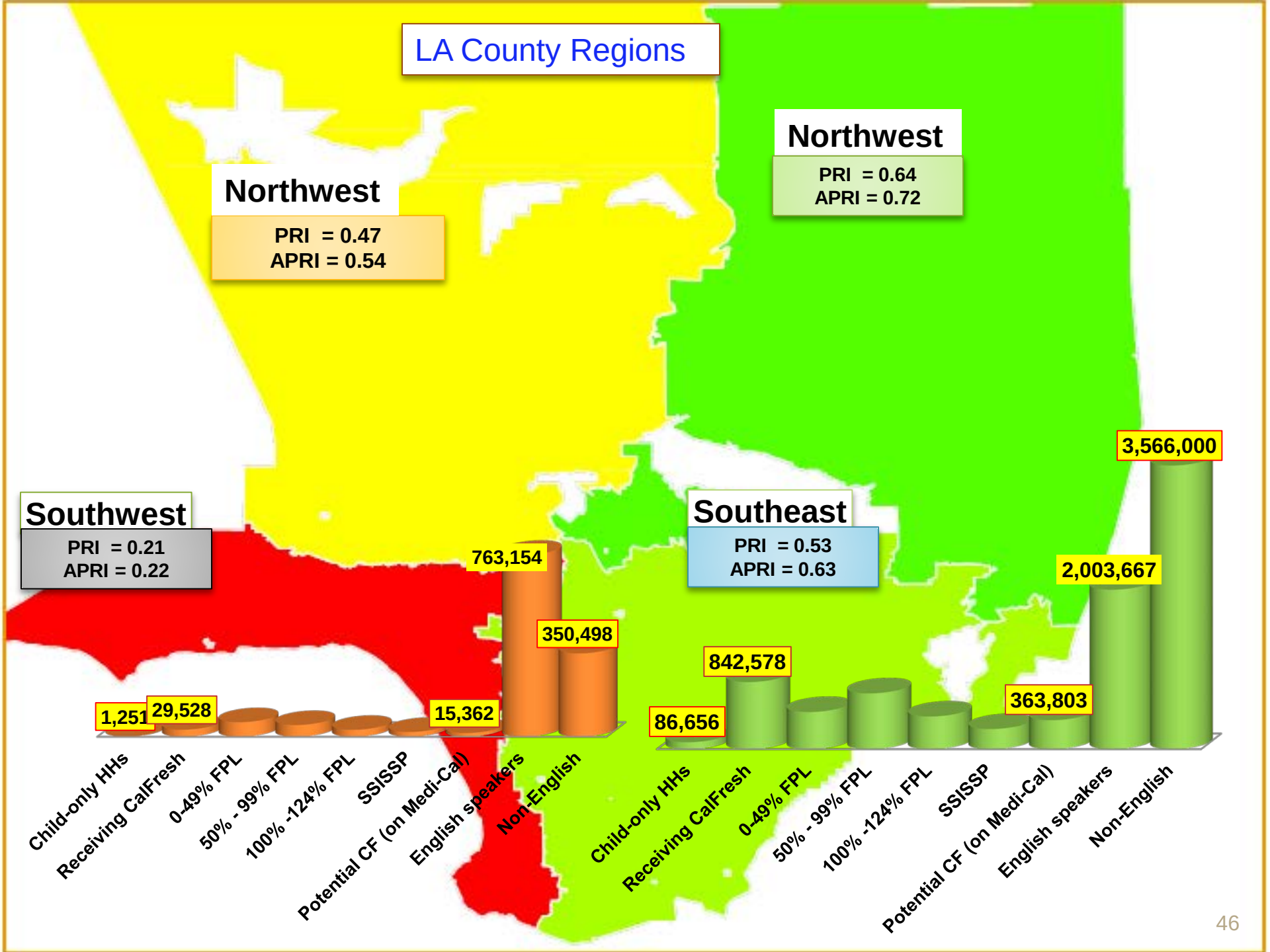
Comparing the PRI to the APRI

LA County True + False "Hot Spots" of Low CalFresh Participation (June 2013): PRI

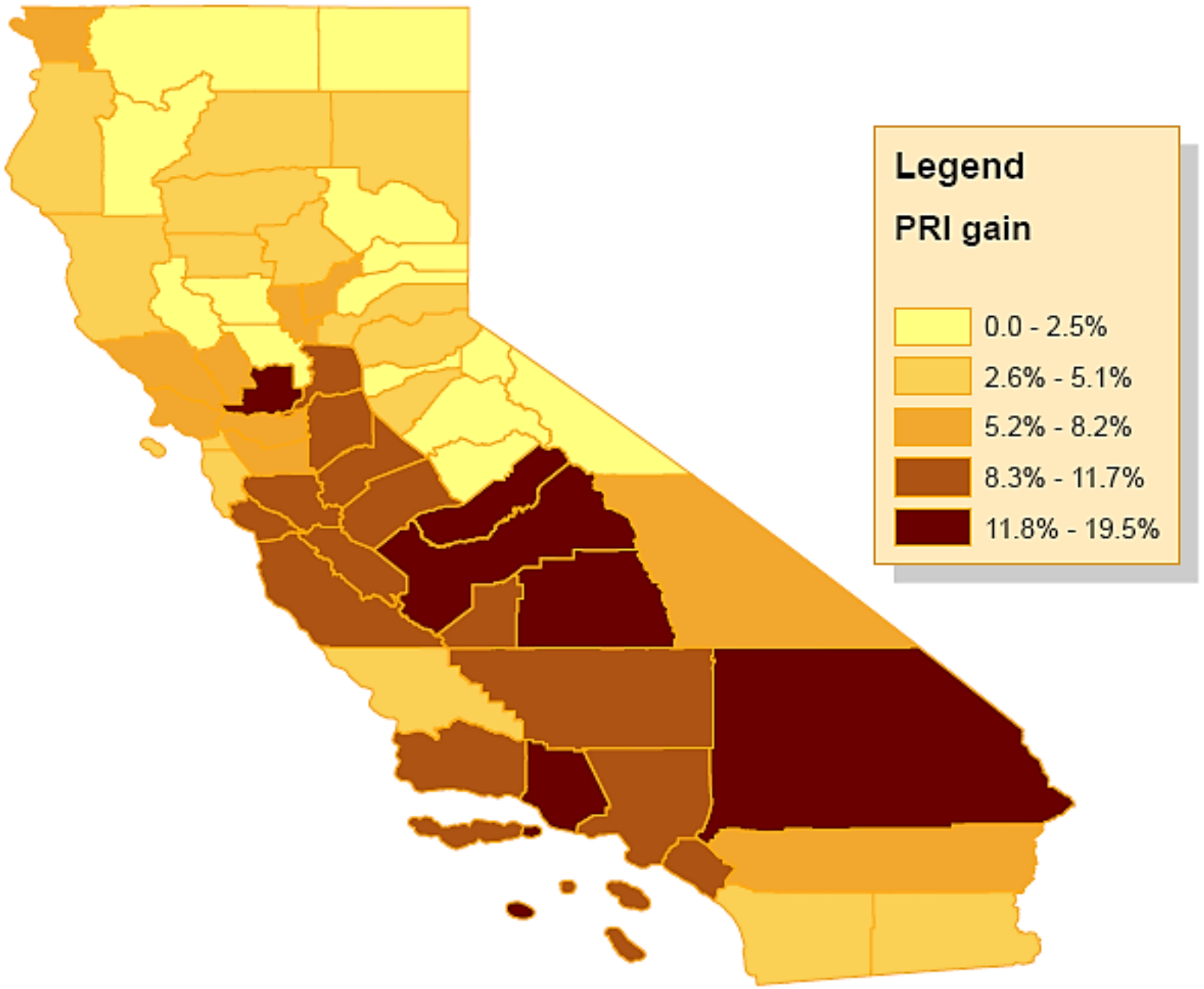


LA County True "Hot Spots" of Low CalFresh Participation (June 2013): APRI

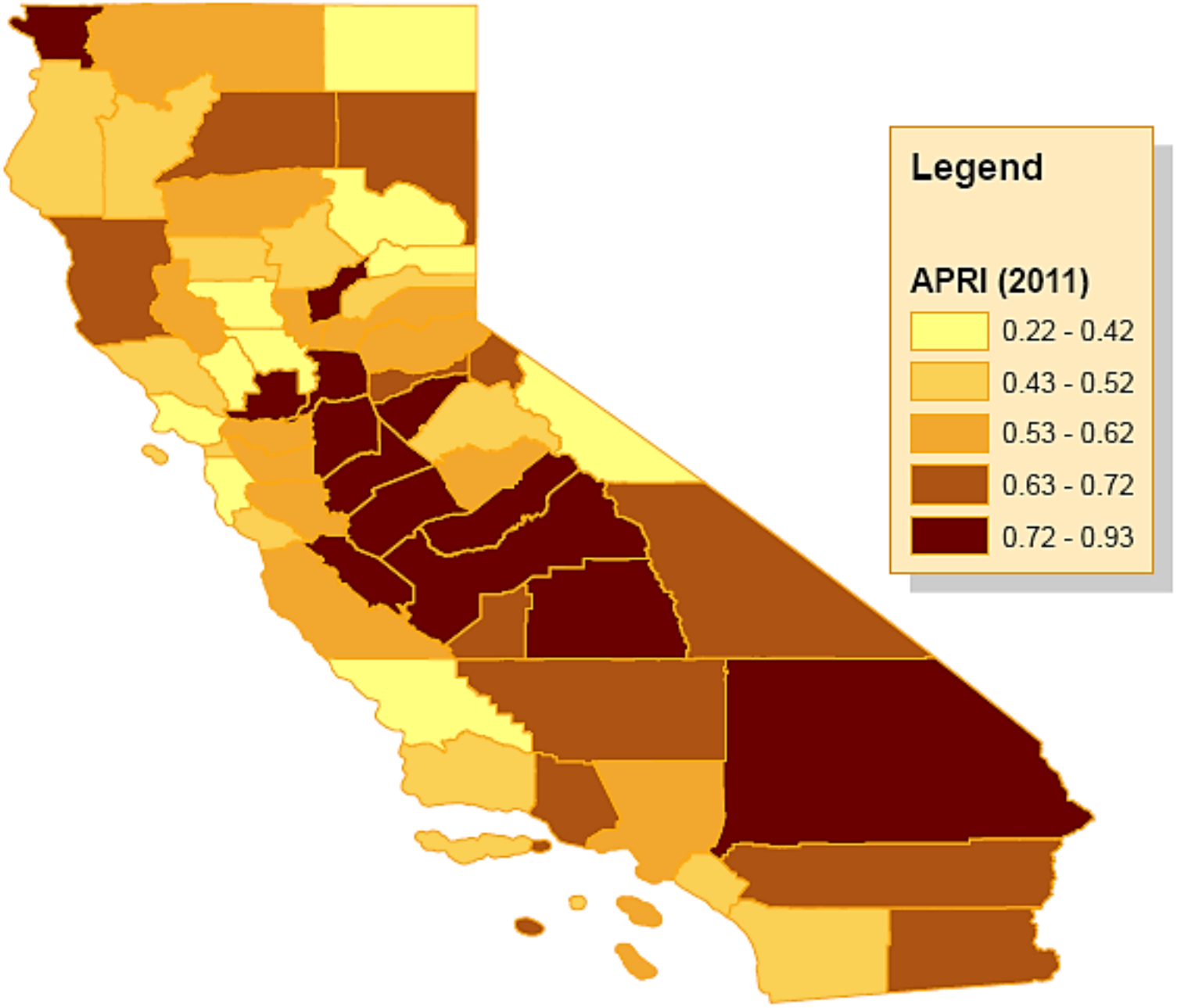



LA County Regions
Northwest
PRI = 0.47
APRI = 0.54
Northwest
PRI = 0.64
APRI = 0.72
Southwest
PRI = 0.21
APRI = 0.22
Southeast
PRI = 0.53
APRI = 0.63
1,251
29,528
15,362
763,154
350,498
86,656
842,578
363,803
2,003,667
3,566,000
Child-only HHs
Receiving CalFresh
0-49% FPL
50% - 99% FPL
100% -124% FPL
SSISSP
Potential CF (on Medi-Cal)
English speakers
Non-English
Child-only HHs
Receiving CalFresh
0-49% FPL
50% - 99% FPL
100% -124% FPL
SSISSP
Potential CF (on Medi-Cal)
English speakers
Non-English

County CalFresh (2011): Program Reach Index (PRI) Gain Due to the Child-only Method



County CalFresh : Adjusted Program Reach Index (APRI), 2011



LIMITATIONS OF THE CHILD-ONLY METHOD
Numerator and Denominator Data Issues

- The reliability of APRI is affected by percentage of **unmatched addresses** due to **P. O. Box addresses.**

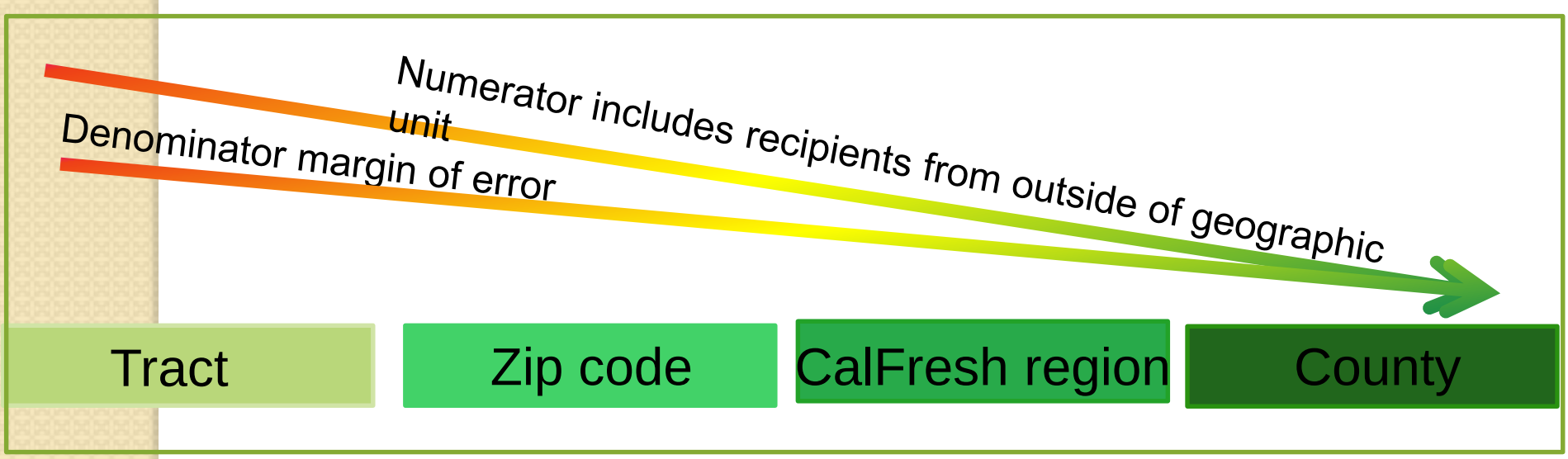
- A single address may be used to provide CalFresh benefits to hundreds or thousands of beneficiaries (over 6,100 recipients in one LA County address and 5,100 recipients in one Fresno County address) making it difficult to interpret APRI maps for surrounding areas.

- The denominator becomes negative for tracts with 0 eligibles and where the eligibles based on 130% poverty (formula below) is lower than the SSI component and/or the child-only households component.

- Due to small sample sizes and large margins of error, the ACS shows many tracts with fewer eligible persons than the number of persons receiving CalFresh; this leads to APRI greater than1.

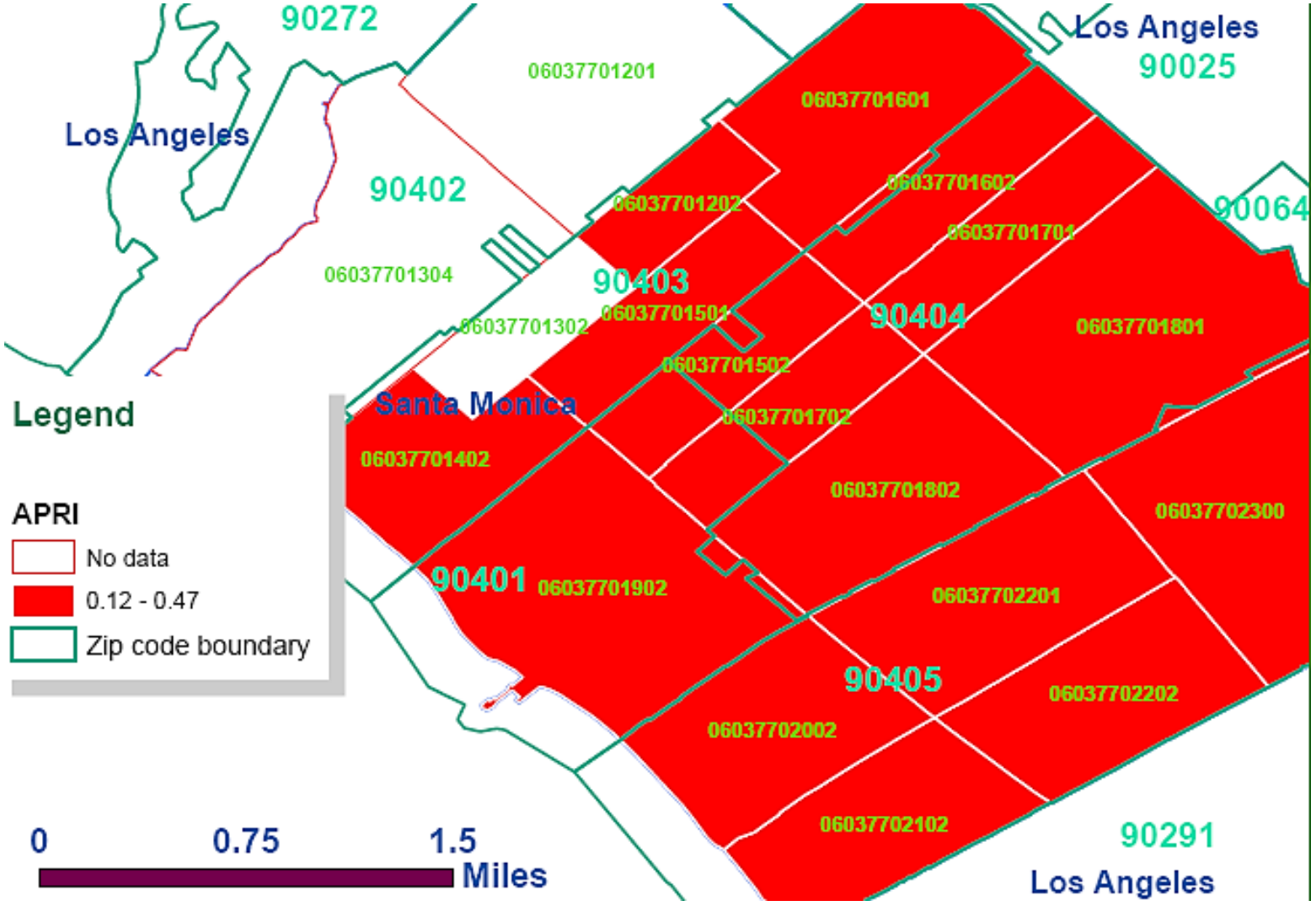
Summary of Data Limitations

The reliability of the APRI increases with increasing geographic scale

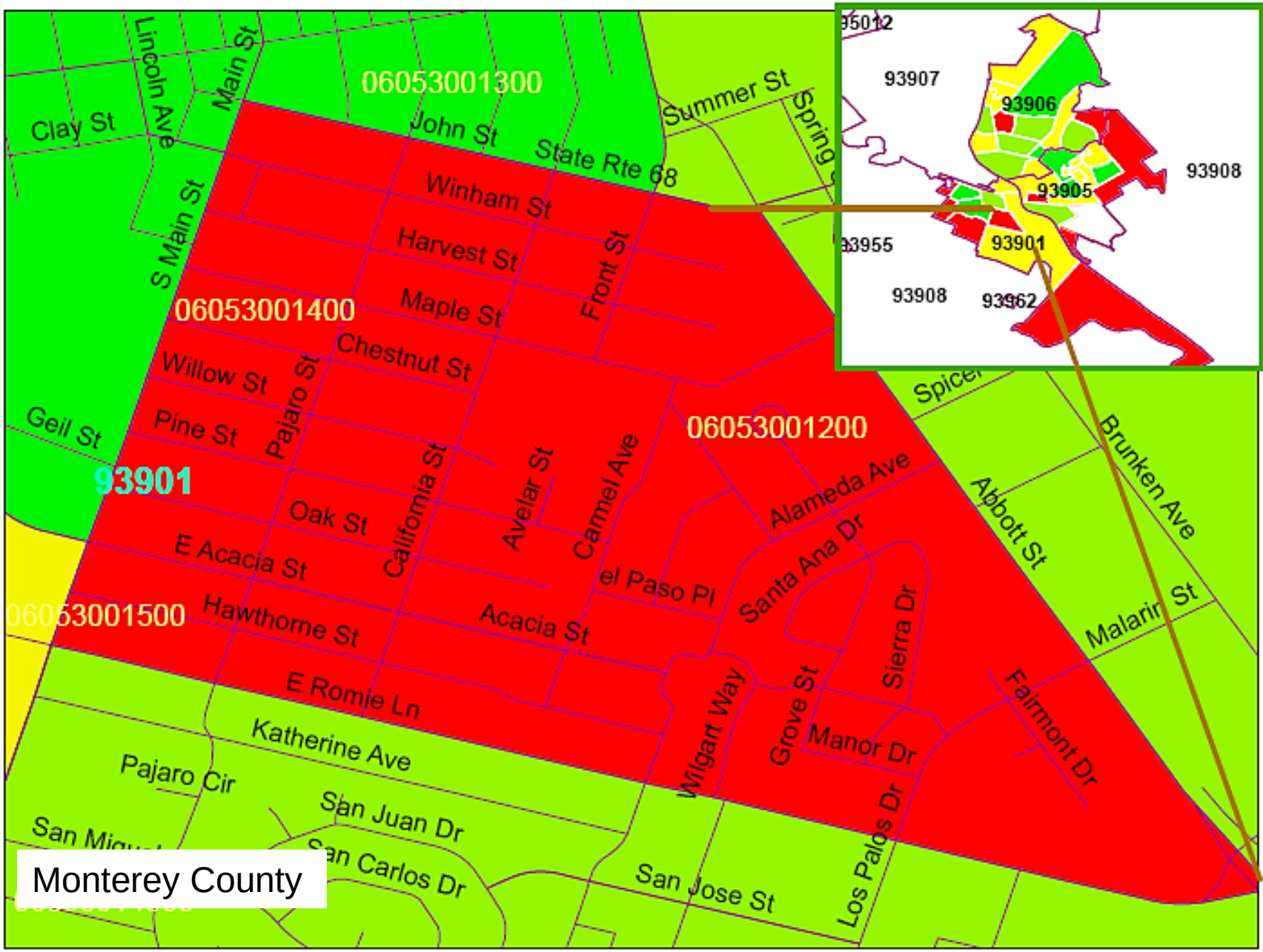


Additional Applications

Santa Monica: An Example of Very Low CalFresh Access in a Low-Poverty Area

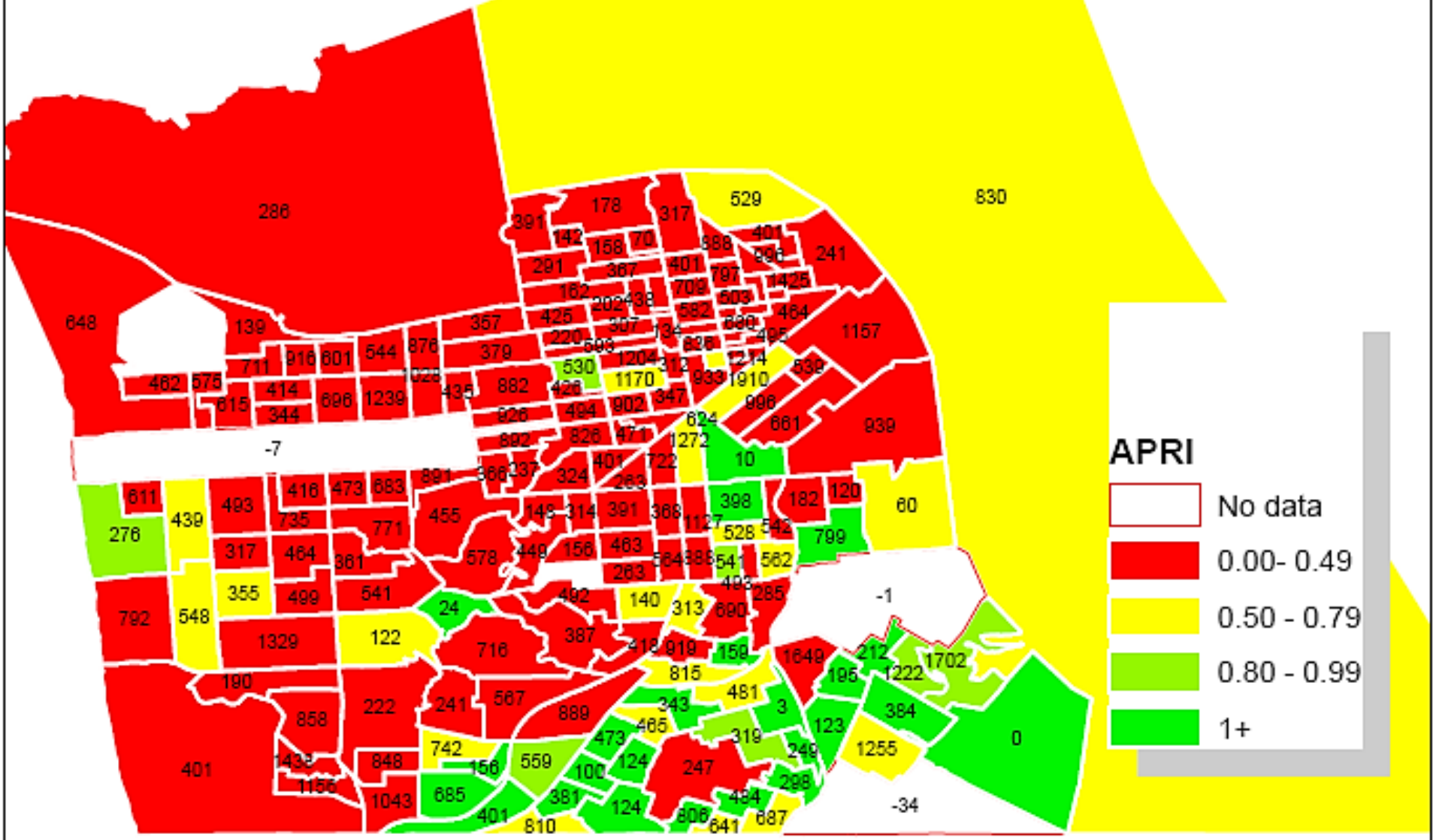


Getting Down to the Tract Level



San Francisco County: Adjusted Number of Individuals Eligible to Receive CalFresh by Census Tract

Adding Data about Population Density



Conclusions

- Geocoding enables us to analyze CalFresh data in the context of the environments in which recipients and potential eligibiles live.
- Estimates of undocumented persons from the Child-Only Method are broadly consistent with county-level estimates from PPIC and state-level estimates from Department of Homeland Security and PPIC.
    - Any discrepancies most likely reflect differences in methodological focus - persons receiving public assistance (Child-Only) vs. persons receiving taxable income (PPIC).
- The Child-Only Method can be used with confidence at county levels and for regions within a county.
    - In some instances, zip code or tract-level analysis may be feasible.
- It appears that in places where non-English speakers are a minority (example: LA Southwest) the participation rate is significantly lower than in places where they are a majority

CalFresh Basics (continued)

Average monthly households
1,890,129

Average monthly individuals
4,124,373

Average household size 2.2

Average monthly benefit per household $333

Average monthly benefit per person
$153

Source: Legislative Analyst's Office (LAO), *CalFresh Program Overview*, March 11, 2014