

Analysis of the 2008-2009 Los Angeles County Department of Environmental Health Healthy Homes Inspection Dataset

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Environmental Health

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for Environmental Health

Points of Discussion

- ❑ Purpose of HHI
- ❑ Goals of Analysis
- ❑ Background
- ❑ Healthy Homes Inspections (HHIs)
- ❑ Methods
- ❑ Geographic Analysis
- ❑ Results
- ❑ Conclusion
- ❑ Next Steps

Healthy Homes Inspection (HHI) Purpose

❑ Purpose

- Prevent adverse adult and child health outcomes
 - **Respiratory problems, lead exposure, injury, and death**

❑ Objectives

- Plan, implement, and evaluate public health programming
- Identify, correct and refer the hazards within the home
- Assess the prevalence of housing conditions that can impact health

❑ Collection of Data

Goals of Healthy Home Inspection Database Analysis

- ❑ Edit and “clean” data into useable format**
- ❑ Perform descriptive analyses**
- ❑ Geographically display descriptive statistics**
- ❑ Feedback on data collection errors**
- ❑ Generate ideas for next analytical steps**

Healthy Homes Surveillance in the United States

- ❑ **Beginning stages**
- ❑ **Varying levels of implementation**
- ❑ **Examples of active healthy homes surveillance activity**
 - Los Angeles County
 - Marion County, IN
 - New York City
 - Baltimore
 - Philadelphia (survey)
 - Oklahoma

Los Angeles County Facts

Los Angeles County

- 4,084 Sq. Miles
- 10,441,080 pop.
- 88 Cities

- Los Angeles City
(3.7 Million, 469 sq. miles)



0 2 4 6
Miles

Unincorporated
City of Los Angeles

Pacific Ocean

Orange

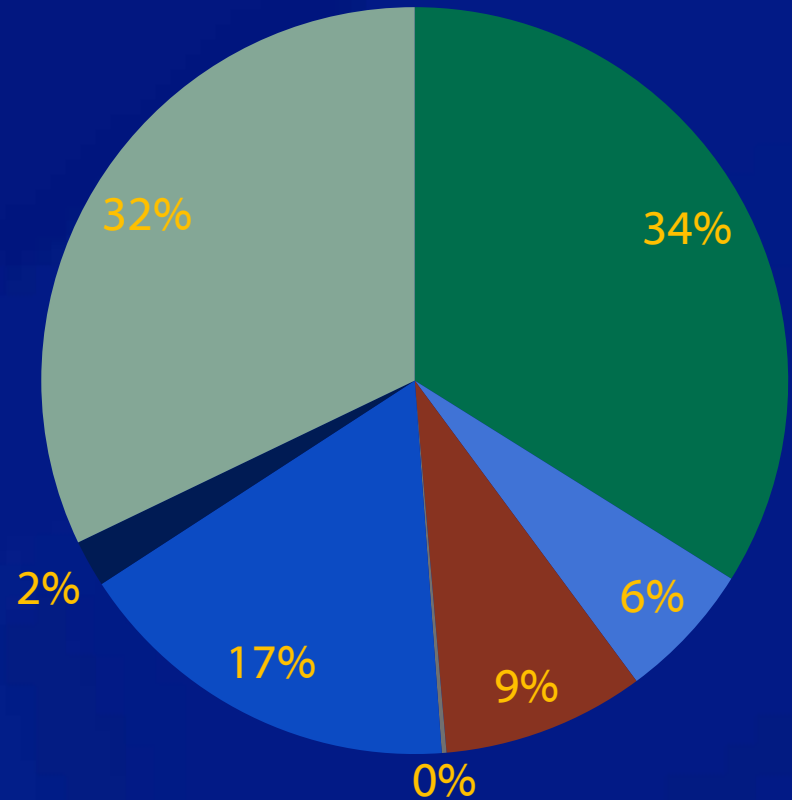
Size Comparison

- Chicago
- Dallas
- Houston
- Philadelphia
- Phoenix
- San Antonio

10 Million; 2,200 sq miles

Los Angeles County Racial Description

- White
- Black
- Asian
- Native Hawaiian/Other Pacific Islander
- Other
- Two or more
- Hispanic/Latino



Los Angeles County HHI Overview

- ❑ **Who: 29 Inspectors**
- ❑ **What: 944 unique properties received HHIs**
 - 8,286 total records
- ❑ **Where: The “worst” areas of LA County**
- ❑ **When: July 2008- November 2009**
- ❑ **Inspections: Overall, there were 46,487 total mandatory inspections performed during Fiscal Year 2008**



Components of Healthy Homes Surveillance

- ❑ **Training of inspectors**
- ❑ **Database development and management**
- ❑ **Data collections form creation and modification**
- ❑ **Data entry, editing**
- ❑ **Action (e.g., correction, referral)**
- ❑ **Feedback to inspectors**
- ❑ **Reporting**
- ❑ **Modifications**

Healthy Homes Inspections Authority

❑ The Los Angeles County Department of Environmental Health (EH)

- Conducts Healthy Homes Inspections (HHIs) by authority under Los Angeles County Code - Title 11 Health and Safety
 - Chapter 11.16 – Garbage and Other Waste Material
 - Chapter 11.20 - Housing
 - Chapter 11.30 – Rodent and Pest Control
- All rental properties with ≥ 5 units are required by Title 8 to have a public Health license and be inspected by EH.



7 Principles of Healthy Housing

Keep it:

- Clean
- Dry
- Contaminant Free
- Maintained
- Ventilated
- Pest-Free
- Safe

HHI Data Collection Methods

- ❑ All code violation are cited and the owner is instructed to repair.
- ❑ Inspectors return to the site as often as necessary until all violations are corrected.
- ❑ Any HH concerns and recommendations for repair are shared with tenants.
- ❑ Inspectors return to check code violations and to see if the tenants made the recommended changes.
- ❑ Once all code violations are corrected, HH recommendations are recorded at that time.
- ❑ Data collection stops when that last code violation is corrected.
 - Approx. 40% of recommendations to tenants are corrected.

Data Collection Instruments

HEALTHY HOMES RECOMMENDATION REPORT COUNTY OF LOS ANGELES ◊ DEPARTMENT OF HEALTH SERVICES ENVIRONMENTAL HEALTH

Site Address		Site Number	Inspection Date
Owner Name	Owner Address		Year Built

The potentially hazardous conditions marked below were observed on your property. These conditions could cause harm or injury to persons on the property. The following corrections are recommended:

EXTERIOR WALL/ROOF/FOUNDATION

101. Missing rain gutters/downspouts—can lead to pooling of water on the roof and/or water intrusion into the building.

POOL/RECREATION/EXERCISE AREAS

102. Personal belongings left in pool—(blow-up rafts, toys) can damage pool maintenance equipment, pump, filter, etc.
 103. Gate to pool enclosure propped open—can provide children easy access to pool, which may lead to accidents.
 104. Pool water cloudy/turbid – can lead to mosquito breeding or potentially be a drowning hazard.
 105. Playground equipment damaged/unsafe—can cause injury while in use.
 106. Damaged exercise equipment—can cause injury while in use.

REFUSE AREA/GARBAGE CONTAINERS

107. Hazardous materials—chemical, biological, or radiological hazardous materials can cause injury or disease.

FIRE SAFETY EQUIPMENT

108. Missing, damaged, or poorly maintained fire safety equipment – can result in serious injury.

COMMON AREA WALKWAYS & STAIRS

109. Poor traction on common area walkways & stairs—can result in slips & falls, especially when wet.

VERMIN/PESTS

110. Termites—can damage the building's structural integrity and compromise building safety.
 111. Bees, wasps, spiders, or other venomous pests—can cause injury or illness through bites, stings, etc.

EXTERIOR & COMMON AREA LIGHTING

112. Burned out light bulbs/inadequate lighting—can result in poor visibility and/or safety hazards.

FENCES/GATES/SECURITY DOORS/ETC

113. Leaning, sagging, or otherwise damaged fences—can pose a safety hazard.
 114. Exit padlocked or blocked—can prevent evacuation during an emergency.
 115. Fire doors propped open—can compromise safety and worsen damage during a fire emergency.

DROWNING/MOSQUITO HAZARDS

116. Container full of standing water—can become a drowning hazard to children and can allow mosquitoes to breed.

FOLIAGE/VEGETATION

117. Overgrown foliage/vegetation—can contribute to rodent/vermin harborage, tripping hazards, and fire hazards.

INTERIOR POISONING/INJURY HAZARDS

118. No carbon monoxide detectors in units—carbon monoxide can be harmful even at low levels.
 119. Property in an area of elevated radon levels—can significantly increase risk of lung cancer, especially in smokers.
 120. Water heater set too high (140°F+)—can lead to scalding or burns, especially in young children.

MISCELLANEOUS

121. Other— _____

Referrals to Other Agencies/Programs —Marked boxes indicate referrals that have been made to appropriate agencies.	
<input type="checkbox"/> 131. Building & Safety	<input type="checkbox"/> 135. Hazardous Materials Unit
<input type="checkbox"/> 132. Code Enforcement	<input type="checkbox"/> 136. Vector Control District (Mosquito Abatement District)
<input type="checkbox"/> 133. County Agricultural Commissioner	<input type="checkbox"/> 137. Vector Management (Intra-agency: Environmental Health)
<input type="checkbox"/> 134. Fire Department	<input type="checkbox"/> 138. Other (Specify): _____

Questions regarding this notice can be directed to the Metro North Housing Office (213) 351-7896

INSPECTORS:



Data Collection Instruments



HEALTHY HOMES - TENANT RELEVANT CONDITIONS

SITE #:	
UNIT #:	
PHONE:	(213) (323)
TEAM:	

DEMOGRAPHICS

201.	Number of adults (ages 18-59)	
202.	Number of young children (ages 0-2)	
203.	Number of young children (ages 3-6)	
204.	Number of older children (ages 7-17)	
205.	Number of seniors (ages 60+)	
206.	TOTAL NUMBER TENANTS IN UNIT:	
207.	Number of pregnant women	
208.	With asthma or immune-compromised	
209.	Number of smokers	
210.	Number in unit - NO ENGLISH	
211.	# of months resided in unit	
212.	Denied healthy homes interview	Yes


REFERRALS TO OTHER AGENCIES/PROGRAMS

<input type="checkbox"/>	401. Adult Protective Services
<input type="checkbox"/>	402. Child Protective Services
<input type="checkbox"/>	403. CLPPP
<input type="checkbox"/>	404. Psychiatric Evaluation Team
<input type="checkbox"/>	405. GENESIS Program
<input type="checkbox"/>	406. Public Health Educator
<input type="checkbox"/>	407. Public Health Nursing
<input type="checkbox"/>	408. Injury and Violence Prevention

KEY:
1=Exists 2=Same 3=NA 0=Corrected

CONDITION	Date:				
Minutes spent in unit					
AIR QUALITY/ASTHMA TRIGGERS					
301.	Tobacco smoke/smoking in unit				
302.	Dirty vents				
303.	Mold in grout of counter tiles				
304.	Animal fur, dander, waste, etc				
305.	Excessive dust (allergens)				
306.	Carpet/rugs inside unit				
307.	Tenant not ventilating unit				
ACCIDENT/INJURY					
308.	Rugs slipping/damaged - trip hazard				
309.	Sharp objects accessible to children				
310.	Small objects accessible to children				
311.	Damaged furniture - choke/cut risk				
312.	Furniture unstable/prone to tip over				
313.	Removing window guards/screens				
314.	Window blind cords accessible to child				
315.	Firearms accessible to children				
316.	Water too hot (over 120°F in <10 sec.)				
CLEANLINESS/HOUSEKEEPING					
317.	Dirty floors/floor covering				
318.	Food waste/dirty dishes/dirty counters				
319.	Unit cluttered (vermin harborage risk)				
320.	Dead cockroaches/dry rodent droppings				
321.	Spider webs in unit				
322.	Dirty Linens (mites/moisture risk)				
ELECTRICAL					
323.	Outlets not covered/protected				
324.	Damaged/waste use of electrical cords				
325.	Burned out light bulbs in lamps				
EMERGENCY PREPAREDNESS					
326.	Fire escape plan (lacking/not practiced)				
327.	Blocked emergency escape routes				
328.	Emergency kit unavailable/inaccessible				
FIRE SAFETY					
329.	Matches/lighter accessible to children				
330.	Candle burning/accessible to children				
331.	No fire extinguisher in unit				
332.	Flammables stored by heater/stove				
LEAD					
333.	Ceramic ware, toys, utensils, non-edible				
334.	Candy, home remedies, other edible				
335.	Paint chips, lead in soil, dust, etc				
336.	Tenant's behavior increases risk				
MOISTURE					
337.	Aquarium/terrarium in unit				
338.	Moisture from houseplants				
339.	Tenant behavior increasing humidity				
PETS					
340.	Animals observed scratching/fees				
341.	Diseased/sick pets in home				
342.	Pets known for disease transmission				
POISONING					
343.	Vitamins/medicines accessible to child				
344.	Cleaners/chemicals accessible to child				
345.	Pesticides accessible to children				
346.	CO detectors absent in unit				
347.	Off-gassing concern (VOC's)				
MISCELLANEOUS					
348.	Overcrowding in unit				
349.	Poor food safety practices				
350.	Potentially hazardous tenant behavior				
351.	Unapproved heating practice				
352.	Other				

Data Collection Instruments

		HH TENANT CONDITION CHECKLIST														Site # _____							
Address: _____		Inspector: _____				Year Built: _____				Page 1													
KEY 1= Exists 0 = Corrected		Date	I		R		I		R		I		R		I		R		Totals Initial	Totals Final RV	Unit NA	Totals	
UNIT #:																							
DEMOGRAPHICS	500	TOTAL # OF TENANTS IN UNIT																	5	5	5		
	600	Any children ages 0-6 in unit	YES			YES			YES			YES			YES				60	60	60		
	610	Any pregnant women in unit	YES			YES			YES			YES			YES				61	61	61		
	620	Any smokers in unit	YES			YES			YES			YES			YES				62	62	62		
	630	Any Lead related occupation/hobby	YES			YES			YES			YES			YES				63	63	63		
	640	Any with Asthma (check all (A) conditions below)	YES			YES			YES			YES			YES				64	64	64		
	650	Other	YES			YES			YES			YES			YES				65	65	65		
660	Denied healthy homes interview	YES			YES			YES			YES			YES				66	66	66			
GENERAL CONDITIONS	AIR QUALITY																						
	701.	Tobacco smoke/smoking in unit (A)																	70	70	70		
	711.	Not ventilating/Behavior incr. humidity (A)																	71	71	71		
	ACCIDENT/INJURY																						
	721.	Rugs slipping – trip/fall hazards																	72	72	72		
	731.	Water too hot (over 120°F)																	73	73	73		
	CLEANLINESS/HOUSEKEEPING																						
	741.	Dirty floors/dishes/counters/walls																	74	74	74		
	751.	Unit cluttered-vermin harborage risk (A)																	75	75	75		
	761.	Dead roaches/dry rodent droppings (A)																	76	76	76		
	ELECTRICAL																						
	771.	Electrical cords damaged/unsafe use																	77	77	77		
	FIRE SAFETY																						
	781.	Blocked emergency escape routes																	78	78	78		
791.	Candle burning in unit (A)																	79	79	79			
801.	Flammables stored by heater/stove																	80	80	80			
MISCELLANEOUS																							
811.	Occupancy/Overcrowding																	81	81	81			
821.	Poor food safety																	82	82	82			
831.	Unapproved heating practice																	83	83	83			
841.	Other:																	84	84	84			
851.	Other:																	85	85	85			
CHILD SAFETY	861.	Lead dishware or toys (non-edible)																86	86	86			
	871.	Lead candy, home remedies (edible)																87	87	87			
	881.	Lead paint chips, dust, etc. (Pre-1978)																88	88	88			
	891.	Tenant's behavior increases lead risk																89	89	89			
	901.	Window blind cords accessible to child																90	90	90			
	911.	Outlets not covered/protected																91	91	91			
ASTHMA	921.	Poisons/Chemicals accessible to child																92	92	92			
	931.	Carpet/rugs inside unit (A)																93	93	93			
	941.	Animals in unit (fur, dander, waste) (A)																94	94	94			
	951.	Excessive dust (A)																95	95	95			
	961.	Active mold growth in unit (A)																96	96	96			
	971.																	97	97	97			
	981.																	98	98	98			
	991.	NO HH HAZARDS FOUND																99	99	99			

(A) = ASTHMA If any occupant has asthma, then check for these conditions.

Study Methods

□ Data “cleaning”

- SAS software
- Centrus desktop geo-coding software

□ Descriptive statistical analysis

- Excel software
- SAS software

□ Geographical analysis

- Arc View software

HHI Demographic Results (N=944 properties)

Num. of Units With Children < 6 years	Number	Percent
1	181	19 %
2	77	8 %
3 or more	57	6 %
None	629	67 %

Num. of Units With Pregnant Women	Number	Percent
1 or more	40	4 %
None	904	96 %

Num. of Tenants Living in Units Inspected	Number	Percent
1-2	86	9 %
3-4	111	12 %
5 or more	256	27 %
Missing	491	52 %

HHI Behavioral Results (N=944 properties)

Num. of Units With Smokers	Number	Percent
1	78	8 %
2	14	2 %
3 or more	3	< 1 %

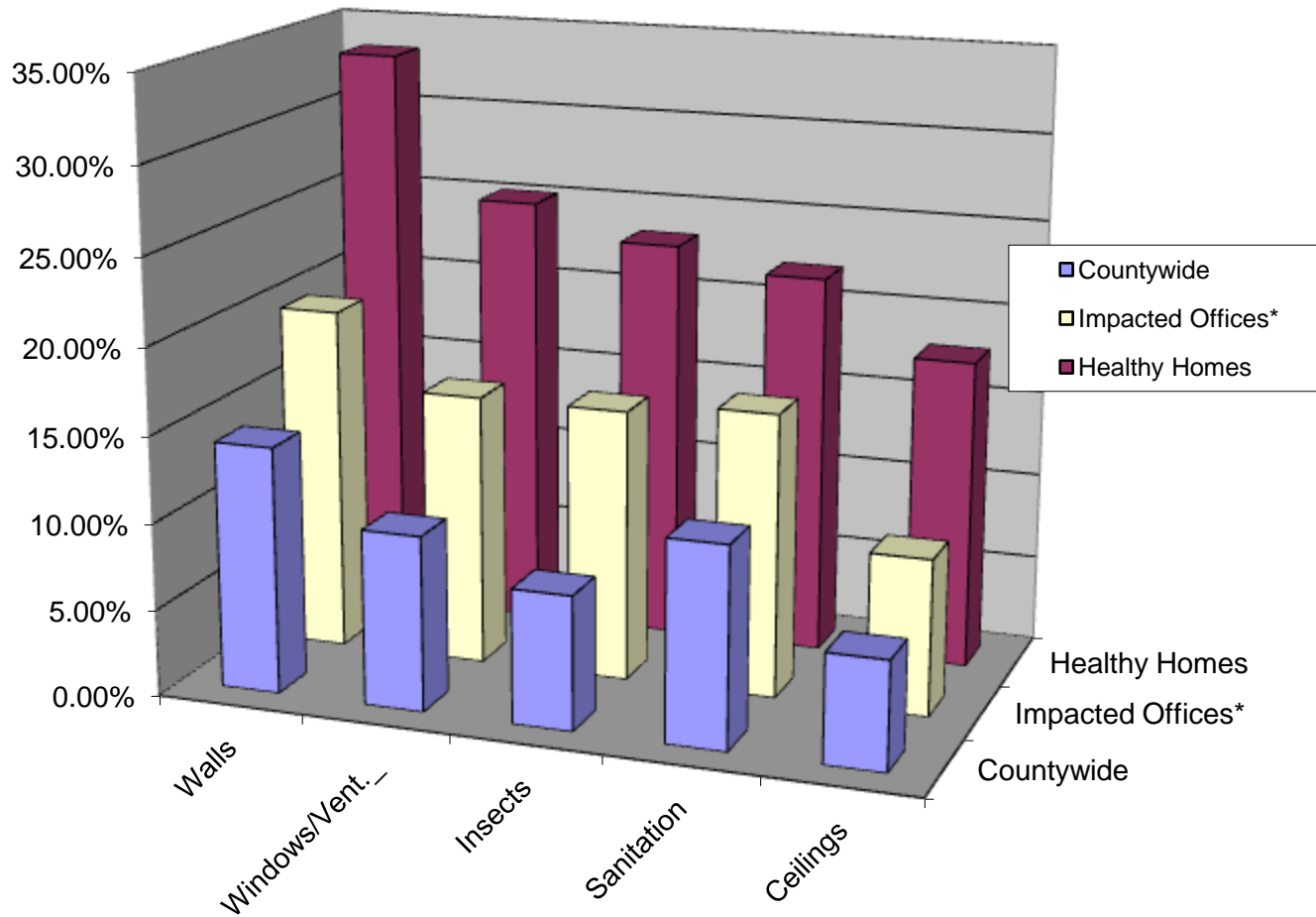
Num. of Units With People With Asthma	Number	Percent
1	58	6 %
2	18	2 %
3 or more	3	< 1 %

Most Frequent Major Violations

MAJOR VIOLATION	FREQUENCY	PERCENT OF ALL UNITS INSPECTED
Lack of carbon monoxide alarms	394	42%
Building lacking a rain gutter system	234	25%
Pre-1978 paint in fair or poor condition	216	23%
Poor traction in walkways	86	9%
Lead hazards observed	79	9%
Unit is dirty with vermin	80	9%
Smokers present	78	8%
Child attractive nuisance	76	8%
Cockroaches observed	74	8%
Dead roaches observed	60	6%

Highest Percentage of Violations by Category – Healthy Homes vs. Routine Inspections

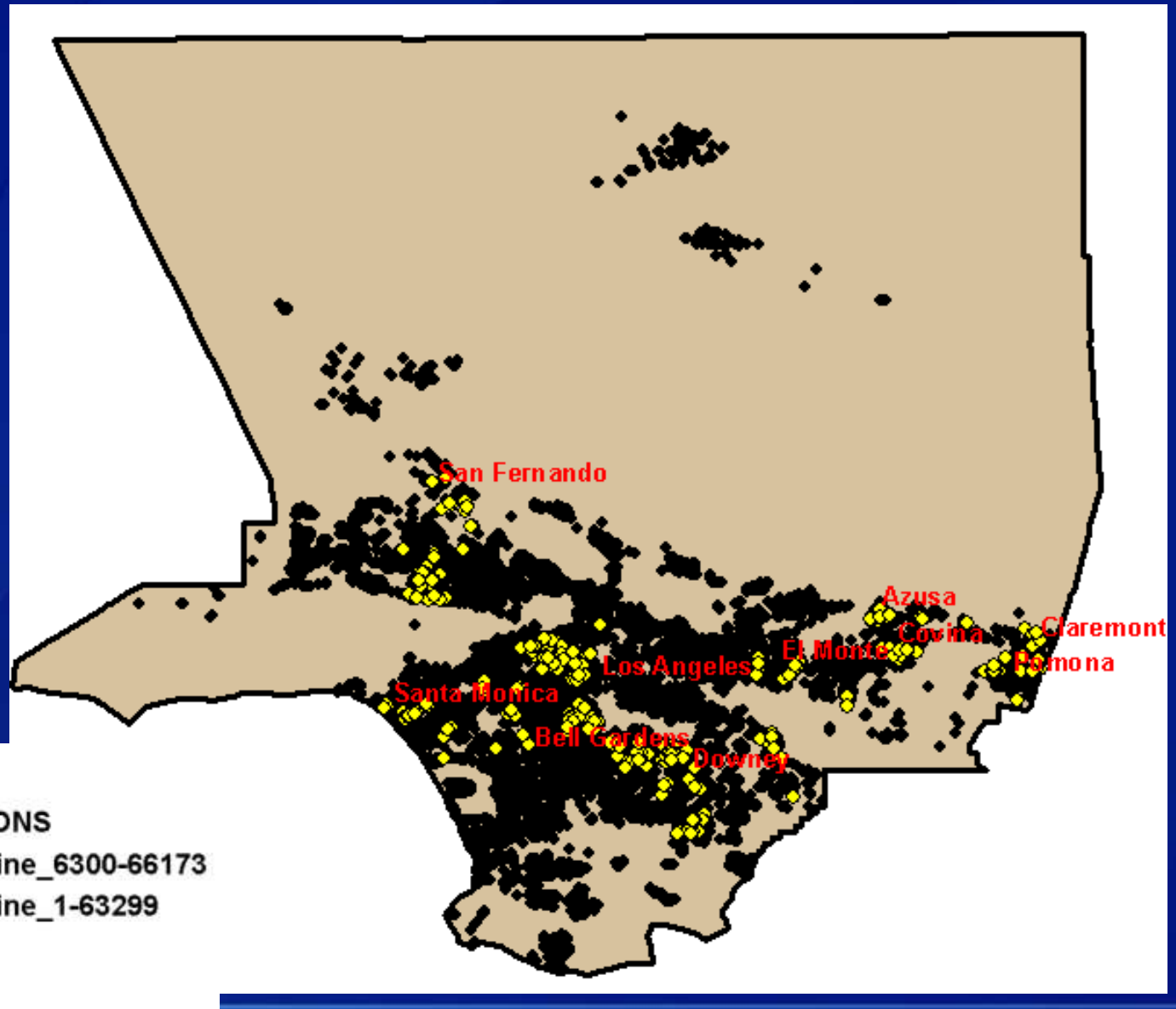
Most Prevalent Violations - Healthy Homes vs. Routine



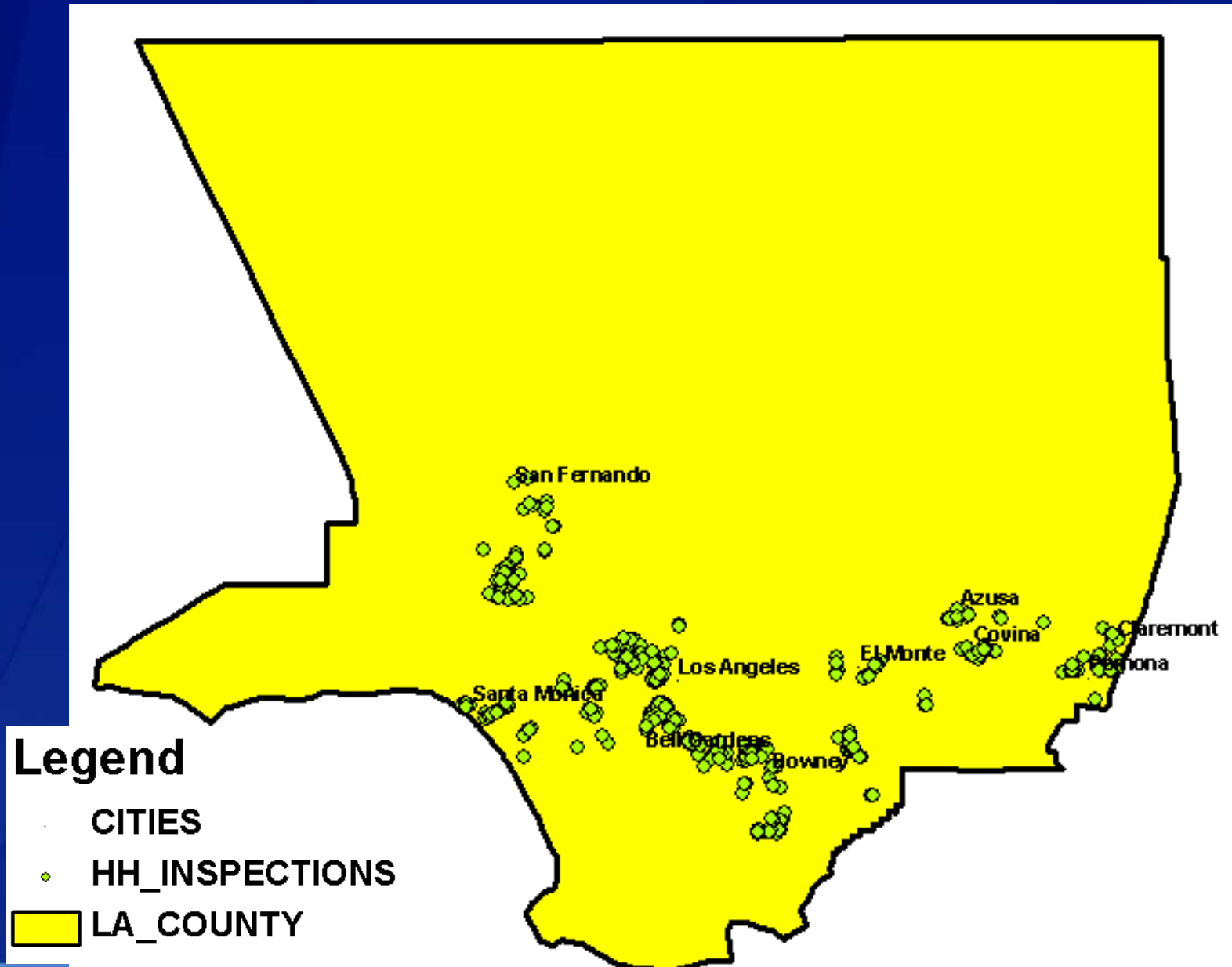
*Code violations are cited during both routine and healthy home inspections. The five most prevalent violations cited during HH inspections are compared against those during routine inspections. For additional comparison, routine inspection results are reported for countywide inspections (all offices) and for the three most impacted district offices (Civic Center, Mid-City, South L.A.).

Geographic Analyses

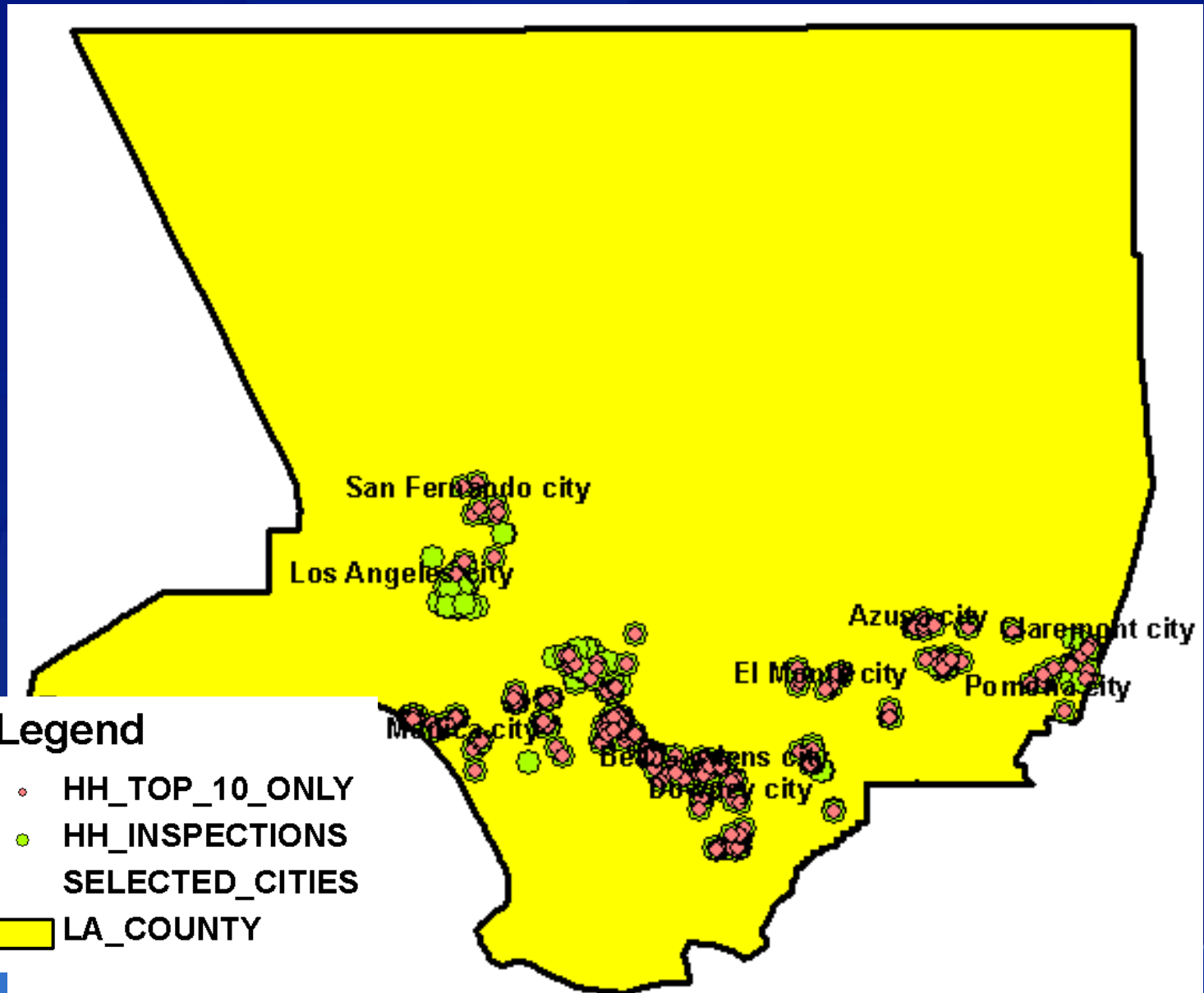
Location of HHIs and All Mandatory Inspection in Los Angeles County (2008-2009)



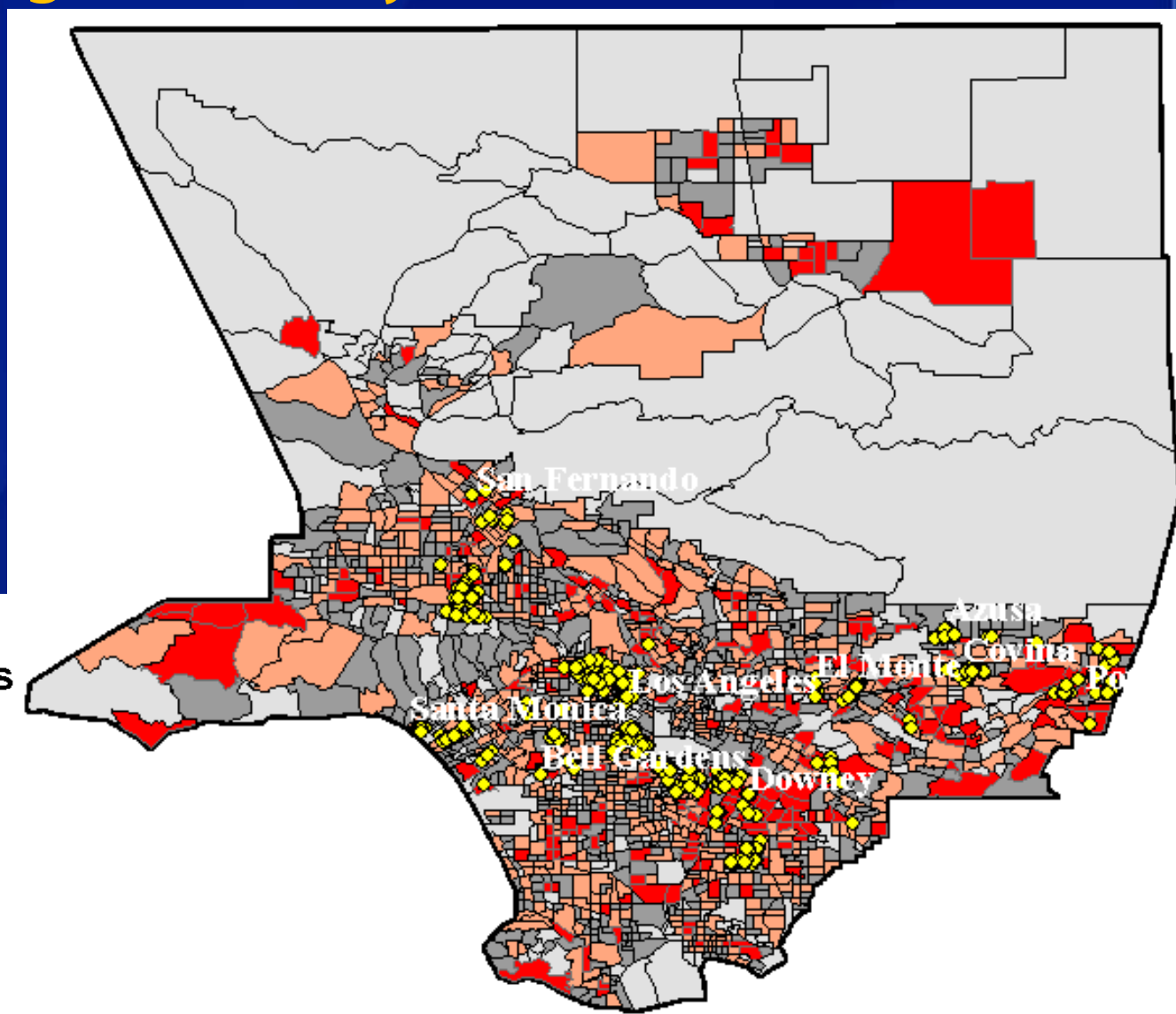
Location of HHIs in Los Angeles County (2008-2009)



Location of HHIs and of the Top 10 Violations in Los Angeles County (2008-2009)



Population by Census Tract Location of HHIs in Los Angeles County (2008-2009)



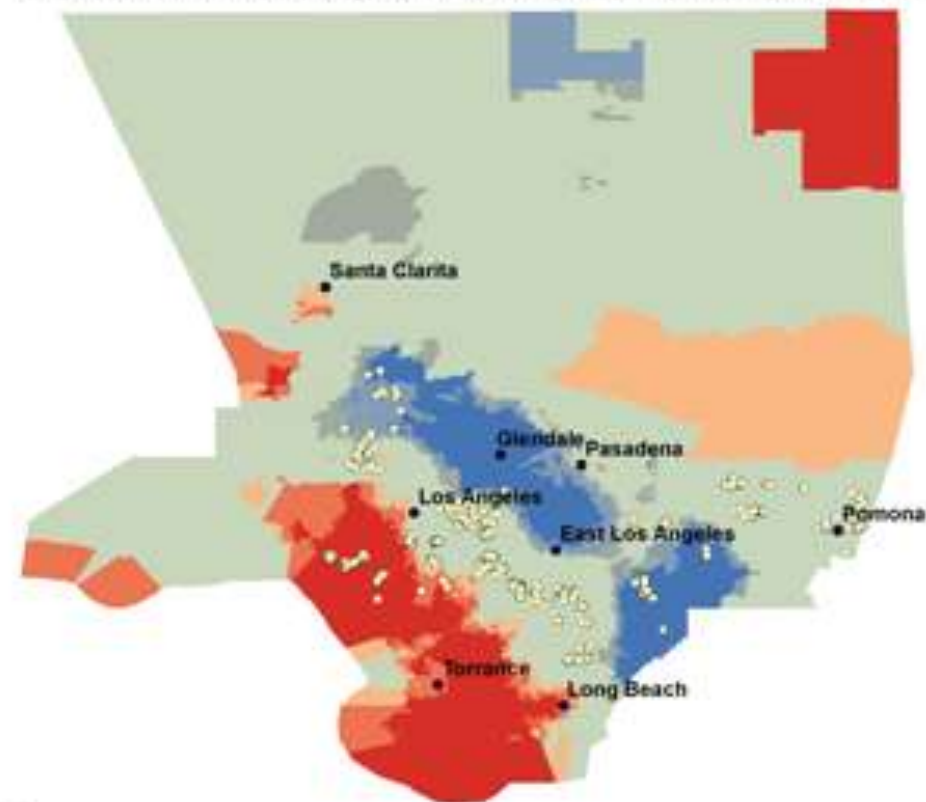
Legend

- HH_INSPECTIONS
- CITIES

CENSUS TRACT TOT_POP

- 0 - 3030
- 3031 - 4742
- 4743 - 6652
- 6653 - 15056

Proportion of children below poverty aged 0-5 years by block group (Census 2000) and the top 10 healthy home violations in Los Angeles County, California (2008-2009)



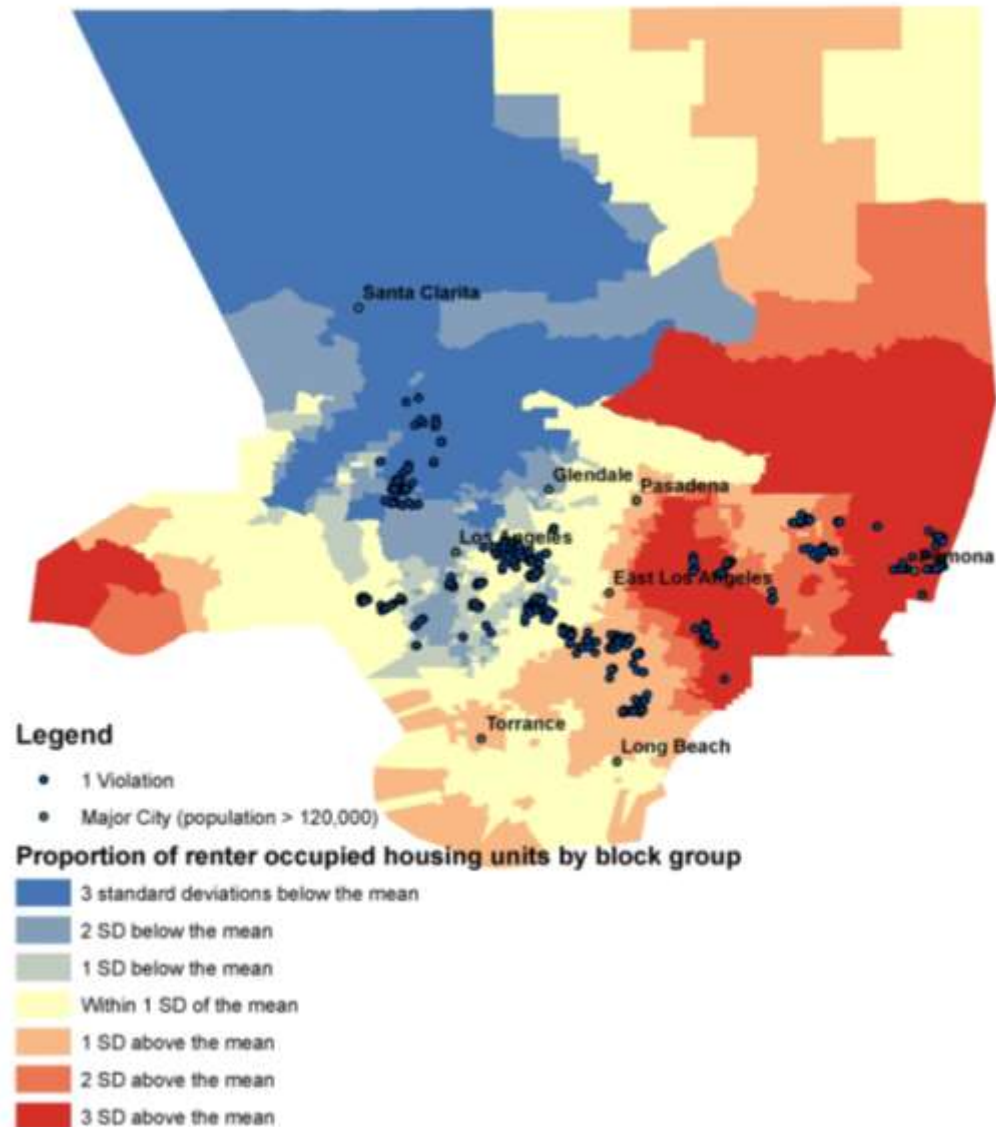
Legend

- Major City (population > 120,000)
- 1 Violation

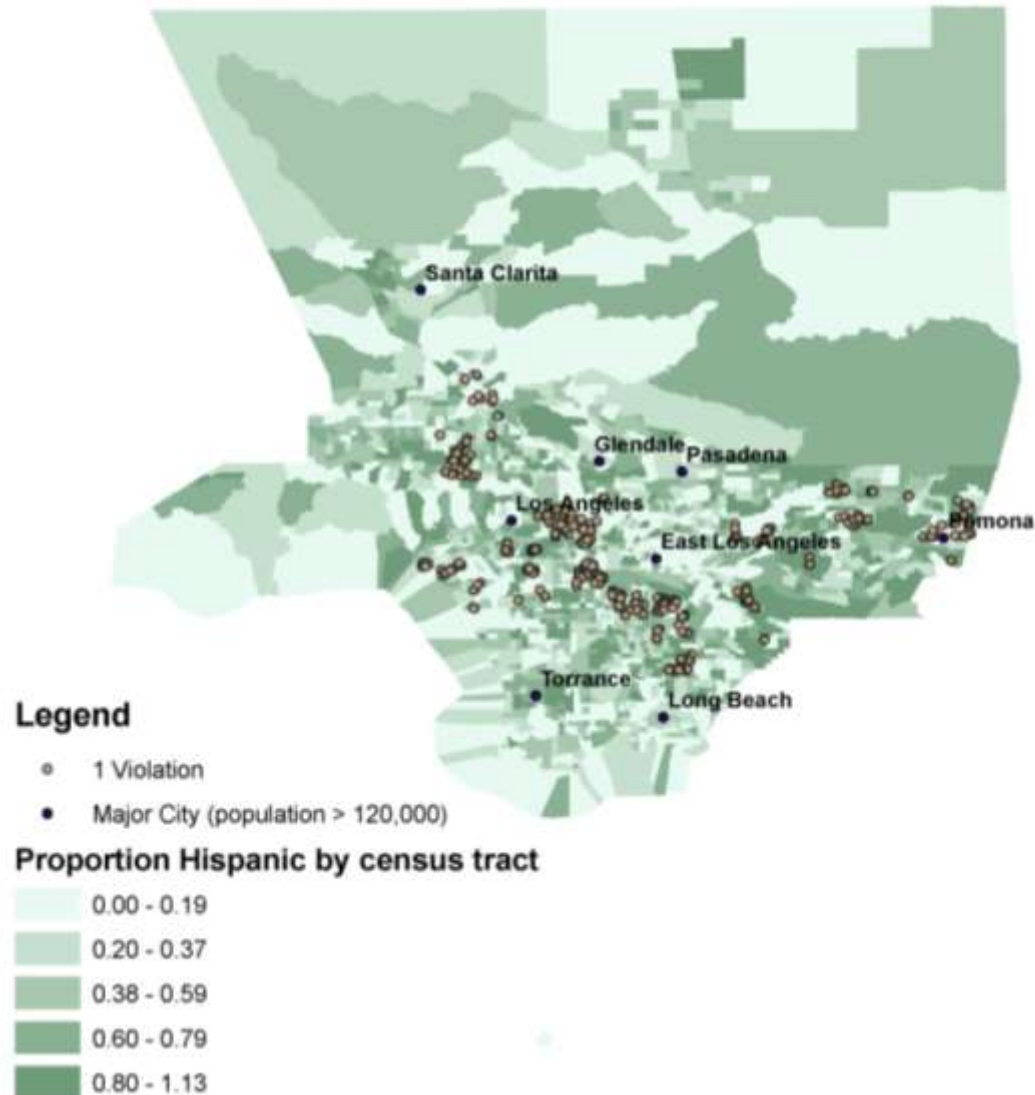
Proportion of children below poverty, aged 0-6 by block group

- 3 standard deviations (SD) below the mean
- 2 SD below the mean
- 1 SD below the mean
- Within +/- 1 SD of the mean
- 1 SD above the mean
- 2 SD above the mean
- 3 SD above the mean

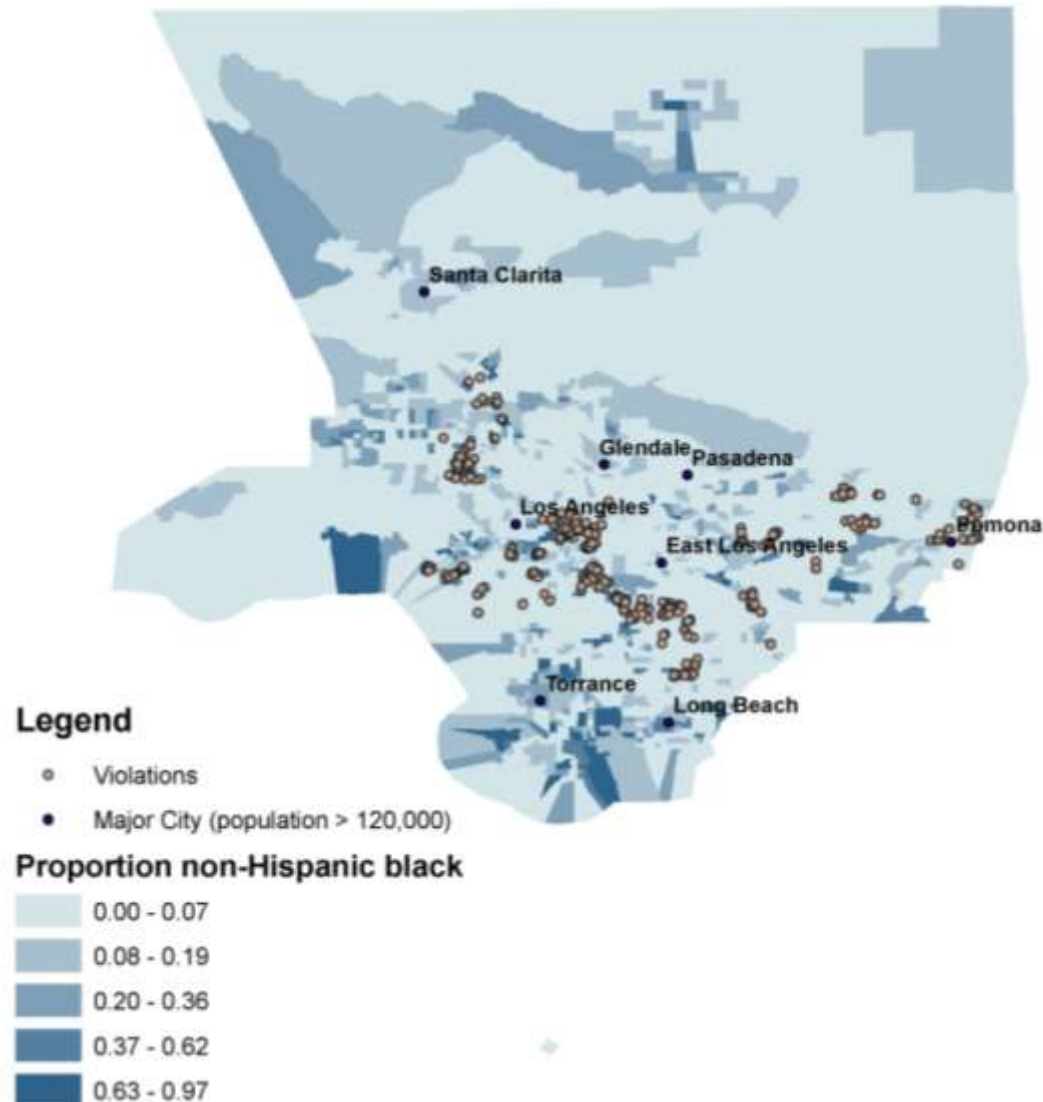
Proportion of renter occupied housing units by block group
(Census 2000) and the top ten healthy home violations in Los
Angeles County, California (2008-2009)



Proportion of Hispanic population by census tract (Census 2000)
and top 10 healthy home violations in Los Angeles County,
California (2008-2009)



Proportion of non-Hispanic black population by census tract (Census 2000) and top 10 healthy home violations in Los Angeles County, California (2008-2009)



Results

- The L.A. County HHI project is a pilot program conducted to better understand and prevent housing-related injuries and morbidity.
- The most frequent violations by category involve walls, windows/ventilation, insects, sanitation and ceilings.
- The most frequent major violation is the lack of carbon monoxide detectors.
- HHIs are conducted in high-population areas.

Results (GIS)

- Allows comparison of HHI data with a wide range of demographic data
- Focuses HHI data using demographic data vs. past inspection scores
- Method to target housing for HHI

Conclusions

- Demonstrate the importance of conducting GIS analysis
- Top violations appear to be evenly distributed based on demographic data. However, violations may be occurring more frequently in high-Hispanic proportion areas.
- Interventions should be developed toward households with the most frequent violations.
- GIS can help target housing for HHI
- Several ways to explore demographic and HHI data

Next Steps

- Compare HHI database with other databases (e.g., routine inspections, blood lead surveillance)
- Focus analysis on most frequent violations and determine relationship to housing and census data
- Geographically overlay other data sources (EMS, Restaurant Inspection database)
- Update to 2010 census data

References/Resources

- Centers for Disease Control and Prevention
- US Department of Health and Human Services
- Environmental Protection Agency
- California Department of Public Health
- California Department of Health Services
- County of Los Angeles-Department of Health Services
- Healthyhomestraining.org
- USPS.com
- US Census Bureau

**Please direct questions to
Maurice Pantoja:
mpantoja@ph.lacounty.gov**

**Tim Dignam:
tdignam@cdc.gov**

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



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Points of Discussion...

- ❑ **Background**
- ❑ **Introduction of Healthy Homes Inspections and Methods Used**
- ❑ **“Top 10” Violations**
- ❑ **Findings**
- ❑ **Geographic Analysis**
- ❑ **Discussion**
- ❑ **Conclusion**

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Study Methods

❑ Descriptive statistical analysis

- Excel software
- SAS software

❑ Geographical analysis

- Arc View software
- Centrus desktop geo-coding software

Data Collection Instruments

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INSPECTORS:



Data Collection Instruments

		HH TENANT CONDITION CHECKLIST														Site # _____				
Address: _____		Inspector: _____				Year Built: _____				Page 1										
KEY		Date																		
1= Exists																				
0 = Corrected																				
Service:		I	R	R	I	R	R	I	R	R	I	R	R	I	R	R	Initial	Totals	Totals	Totals
UNIT #:																				
DEMOGRAPHICS	500	TOTAL # OF TENANTS IN UNIT														5	5	5		
	600	Any children ages 0-6 in unit														YES	YES	YES		
	610	Any pregnant women in unit														YES	YES	YES		
	620	Any smokers in unit														YES	YES	YES		
	630	Any Lead related occupation/hobby														YES	YES	YES		
	640	Any with Asthma (check all (A) conditions below)														YES	YES	YES		
	650	Other														YES	YES	YES		
660	Denied healthy homes interview														YES	YES	YES			
GENERAL CONDITIONS	AIR QUALITY																			
	701.	Tobacco smoke/smoking in unit (A)																		
	711.	Not ventilating/Behavior incr. humidity (A)																		
	ACCIDENT/INJURY																			
	721.	Rugs slipping – trip/fall hazards																		
	731.	Water too hot (over 120°F)																		
	CLEANLINESS/HOUSEKEEPING																			
	741.	Dirty floors/dishes/counters/walls																		
	751.	Unit cluttered-vermin harborage risk (A)																		
	761.	Dead roaches/dry rodent droppings (A)																		
	ELECTRICAL																			
	771.	Electrical cords damaged/unsafe use																		
	FIRE SAFETY																			
	781.	Blocked emergency escape routes																		
791.	Candle burning in unit (A)																			
801.	Flammables stored by heater/stove																			
MISCELLANEOUS																				
811.	Occupancy/Overcrowding																			
821.	Poor food safety																			
831.	Unapproved heating practice																			
841.	Other:																			
851.	Other:																			
CHILD SAFETY	861.	Lead dishware or toys (non-edible)																		
	871.	Lead candy, home remedies (edible)																		
	881.	Lead paint chips, dust, etc. (Pre-1978)																		
	891.	Tenant's behavior increases lead risk																		
	901.	Window blind cords accessible to child																		
	911.	Outlets not covered/protected																		
	921.	Poisons/Chemicals accessible to child																		
ASTHMA	931.	Carpet/rugs inside unit (A)																		
	941.	Animals in unit (fur, dander, waste) (A)																		
	951.	Excessive dust (A)																		
	961.	Active mold growth in unit (A)																		
	971.																			
	981.																			
	991.	NO HH HAZARDS FOUND																		

(A) = ASTHMA If any occupant has asthma, then check for these conditions.

HHI Data Collection Methods

- ❑ **All code violation are cited and the owner is instructed to repair.**
- ❑ **Inspectors return to the site as often as necessary until all violations are corrected.**
- ❑ **Any HH concerns and recommendations for repair are shared with tenants.**
- ❑ **Inspectors return to check code violations and to see if the tenants made the recommended changes.**
- ❑ **Once all code violations are corrected, HH recommendations are recorded at that time.**
- ❑ **Data collection stops when that last code violation is corrected.**
 - **Approx. 40% of recommendations to tenants are corrected.**

HHI Results

- ❑ **Who: 29 Inspectors**
- ❑ **What: 944 unique properties received HHIs**
- ❑ **Where: The “worst” areas of LA County**
- ❑ **When: July 2008- November 2009**
- ❑ **Inspections: Overall, there were 46,487 total mandatory inspections performed during Fiscal Year 2008**



HHI Demographic Results

- ❑ To be added

Most Frequent Major Violations

MAJOR VIOLATION	FREQUENCY	PERCENT OF ALL UNITS INSPECTED
Lack of carbon monoxide alarms	394	42%
Building lacking a rain gutter system	234	25%
Pre-1978 paint in fair or poor condition	216	23%
Poor traction in walkways	86	9%
Lead hazards observed	79	9%
Unit is dirty with vermin	80	9%
Smokers present	78	8%
Child attractive nuisance	76	8%
Cockroaches observed	74	8%
Dead roaches observed	60	6%

“Top 10” violations (by condition)

❑ Water Intrusion:

- 171 → Building lacking rain gutter system

❑ Trip/Fall:

- 174 → Poor traction on walkways and stairs
- 178 → Child attractive nuisance

❑ Poisoning:

- 180 → Hazardous materials and lead hazards
- 181 → No carbon monoxide detectors in units

“Top 10” violations (by condition)

❑ Air Quality:

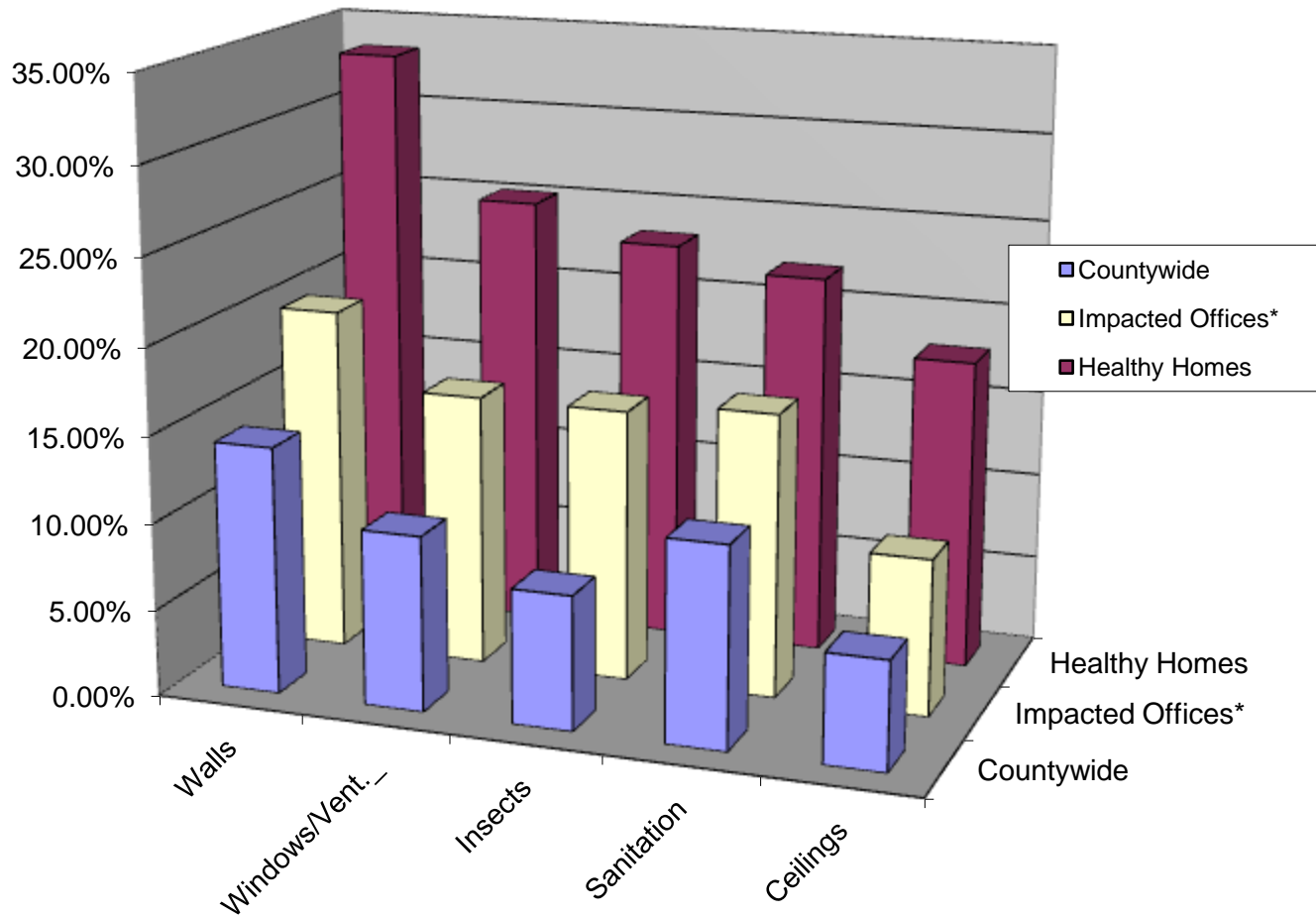
- 701 → Tobacco smoke/smoking in unit

❑ Cleanliness/Housekeeping:

- 741 → Dirty floors/floor covering, food waste/dirty dishes/dirty counters
- 751 → Unit is cluttered- vermin harborage risk
- 761 → Dead cockroaches/dry rodent droppings

Highest Percentage of Violations by Category – Healthy Homes vs. Routine Inspections

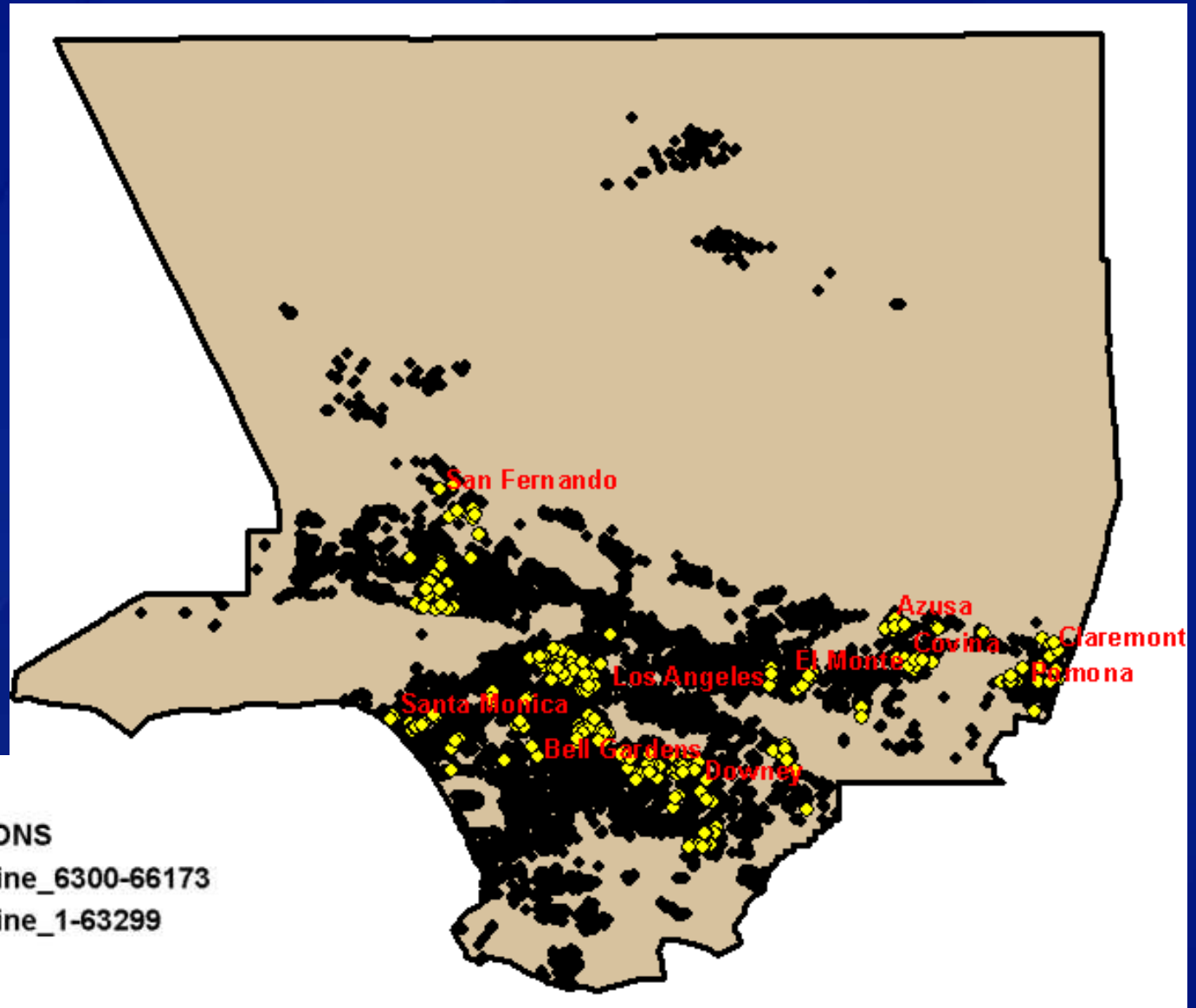
Most Prevalent Violations - Healthy Homes vs. Routine



*Code violations are cited during both routine and healthy home inspections. The five most prevalent violations cited during HH inspections are compared against those during routine inspections. For additional comparison, routine inspection results are reported for countywide inspections (all offices) and for the three most impacted district offices (Civic Center, Mid-City, South L.A.).

Geographic Analyses

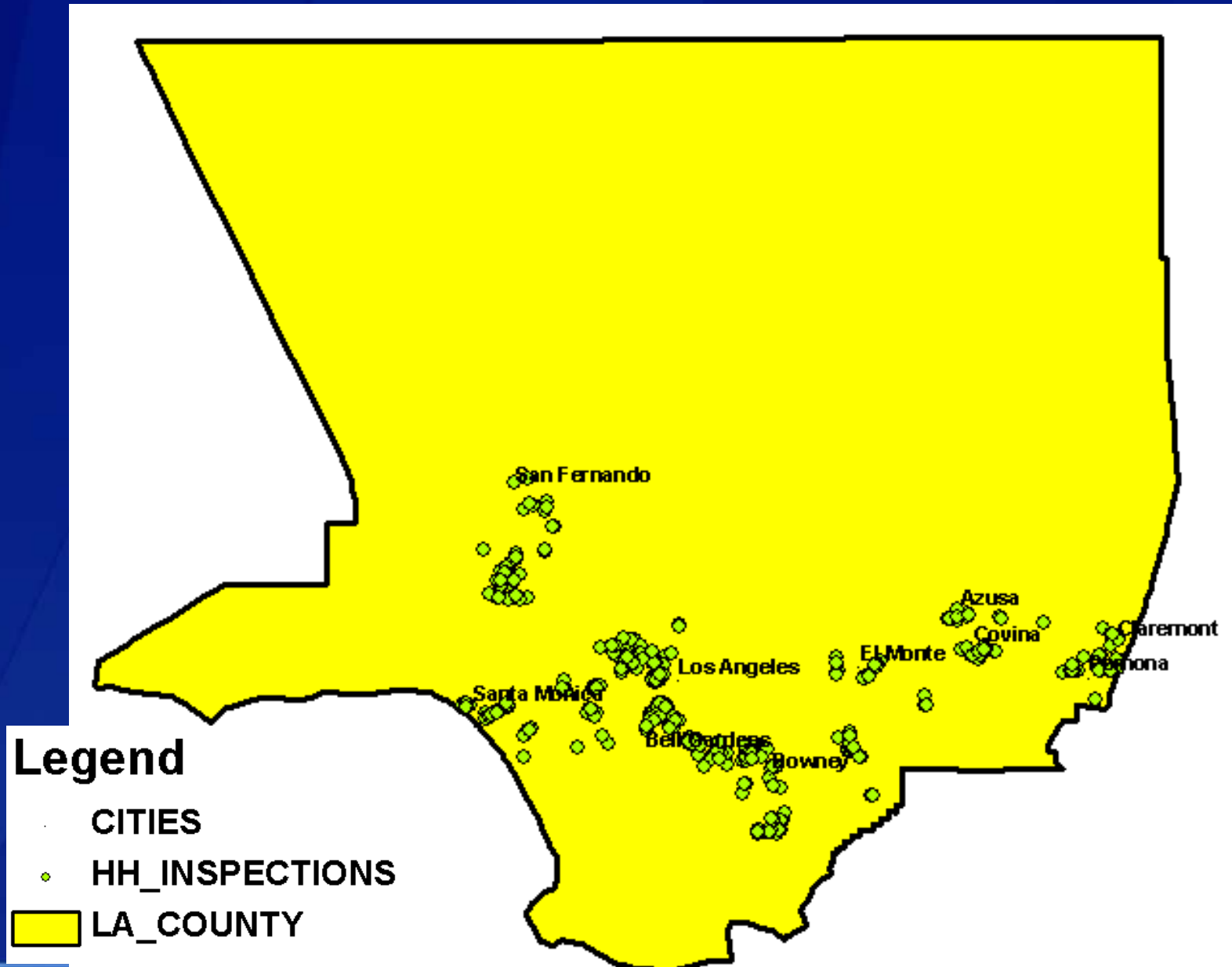
Location of HHIs and All Mandatory Inspection in Los Angeles County (2008-2009)



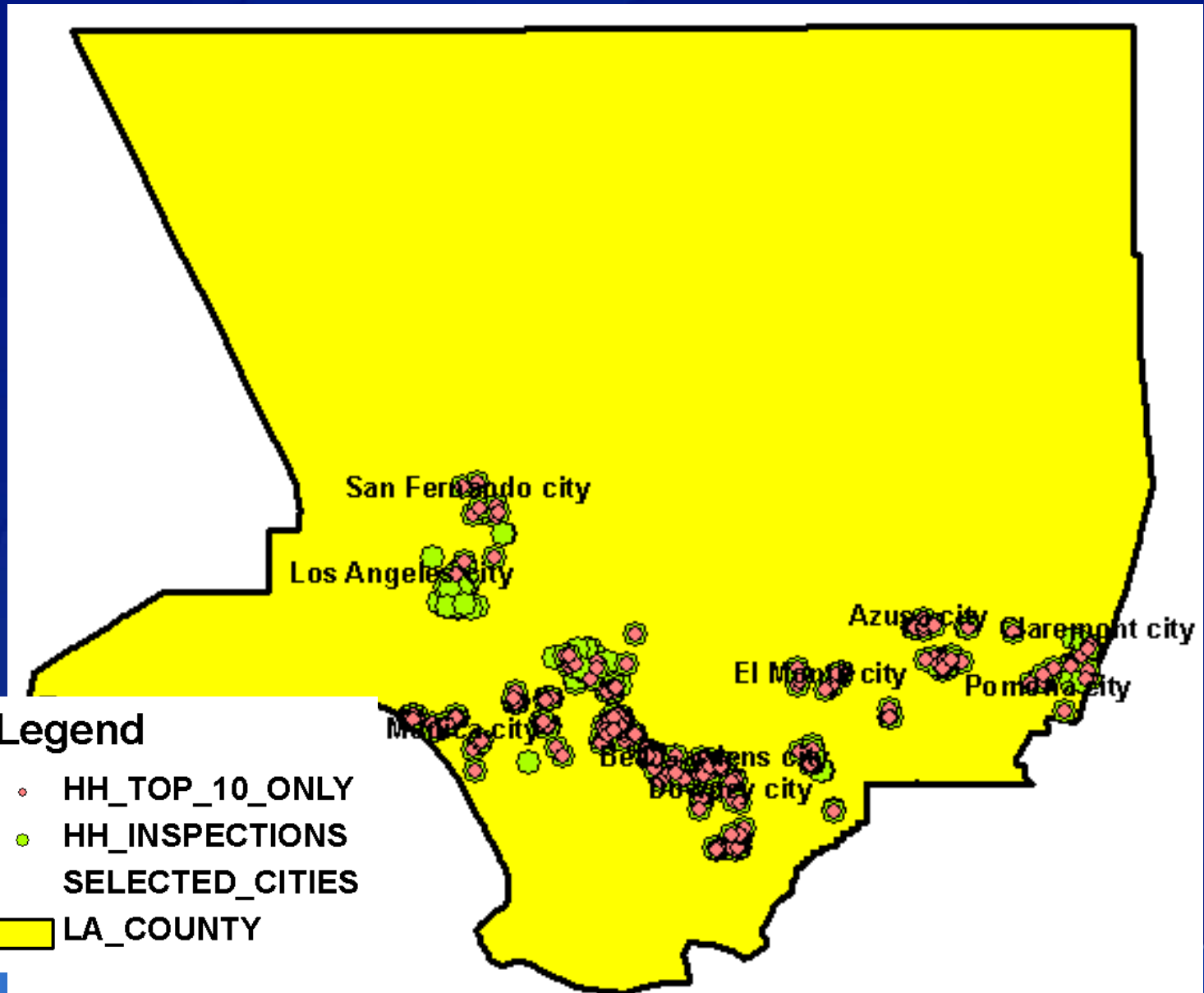
Legend

- HH_INSPECTIONS
- Housing_Routine_6300-66173
- Housing_Routine_1-63299
- CITIES
- LA_COUNTY

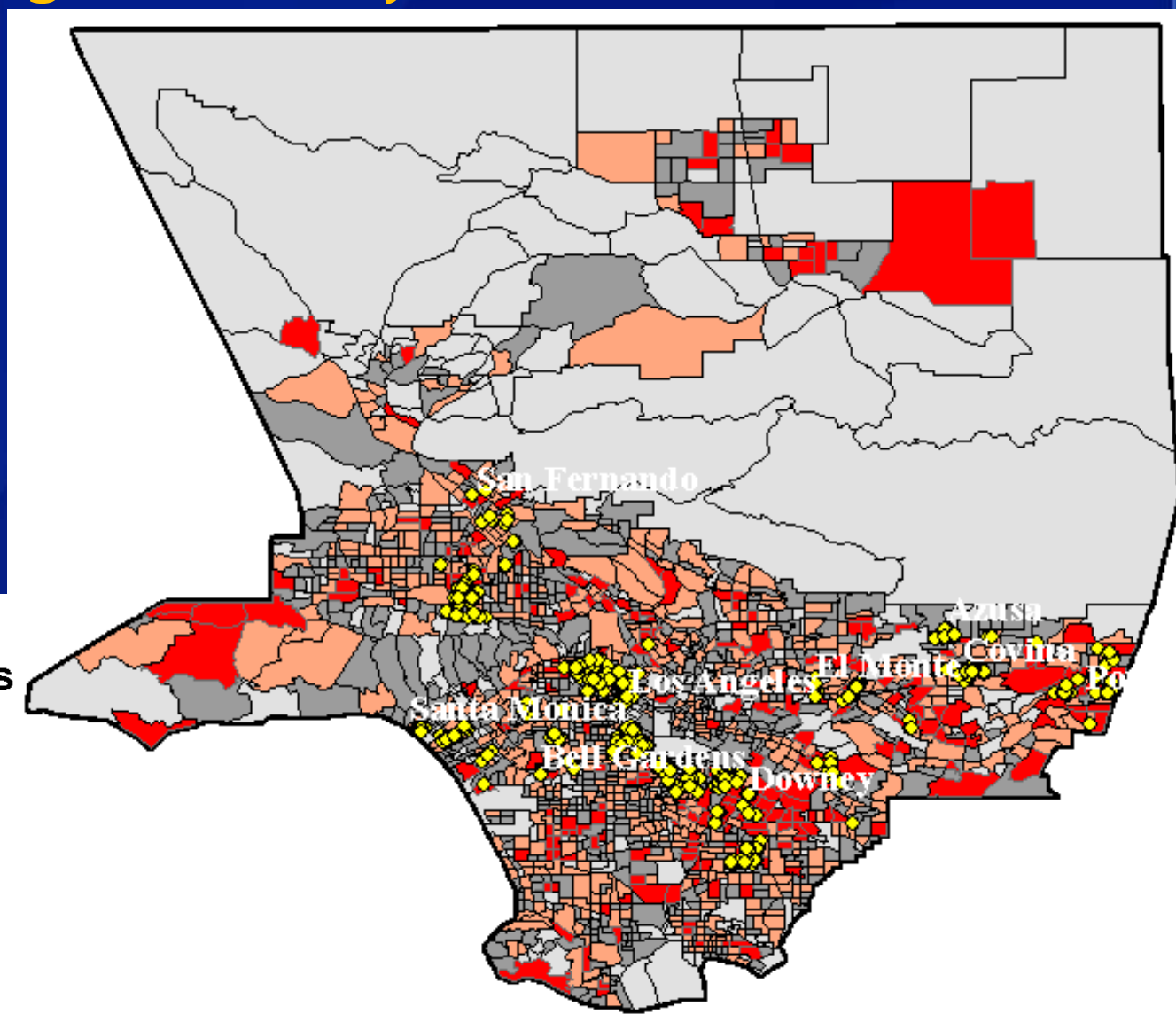
Location of HHIs in Los Angeles County (2008-2009)



Location of HHIs and of the Top 10 Violations in Los Angeles County (2008-2009)



Population by Census Tract Location of HHIs in Los Angeles County (2008-2009)



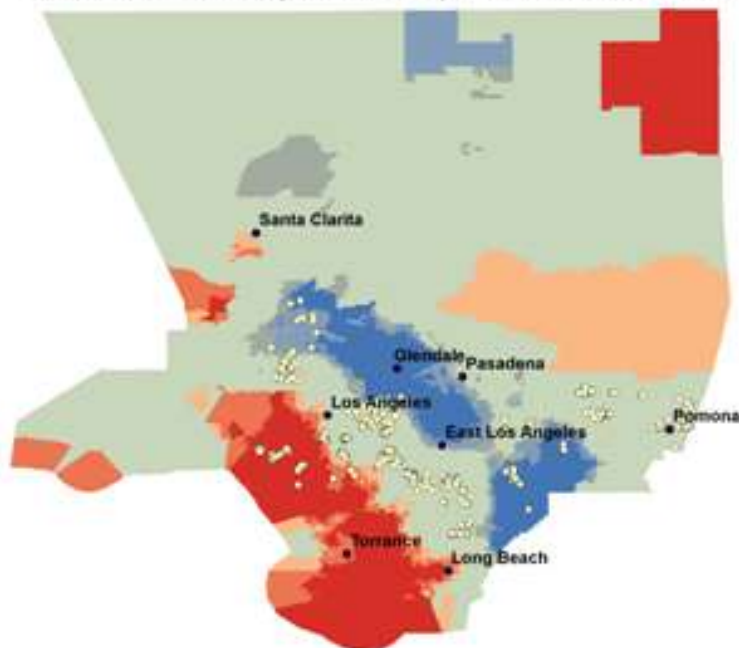
Legend

- HH_INSPECTIONS
- CITIES

CENSUS TRACT TOT_POP

- 0 - 3030
- 3031 - 4742
- 4743 - 6652
- 6653 - 15056

Proportion of children below poverty aged 0-5 years by block group (Census 2000) and the top 10 healthy home violations in Los Angeles County, California (2008-2009)



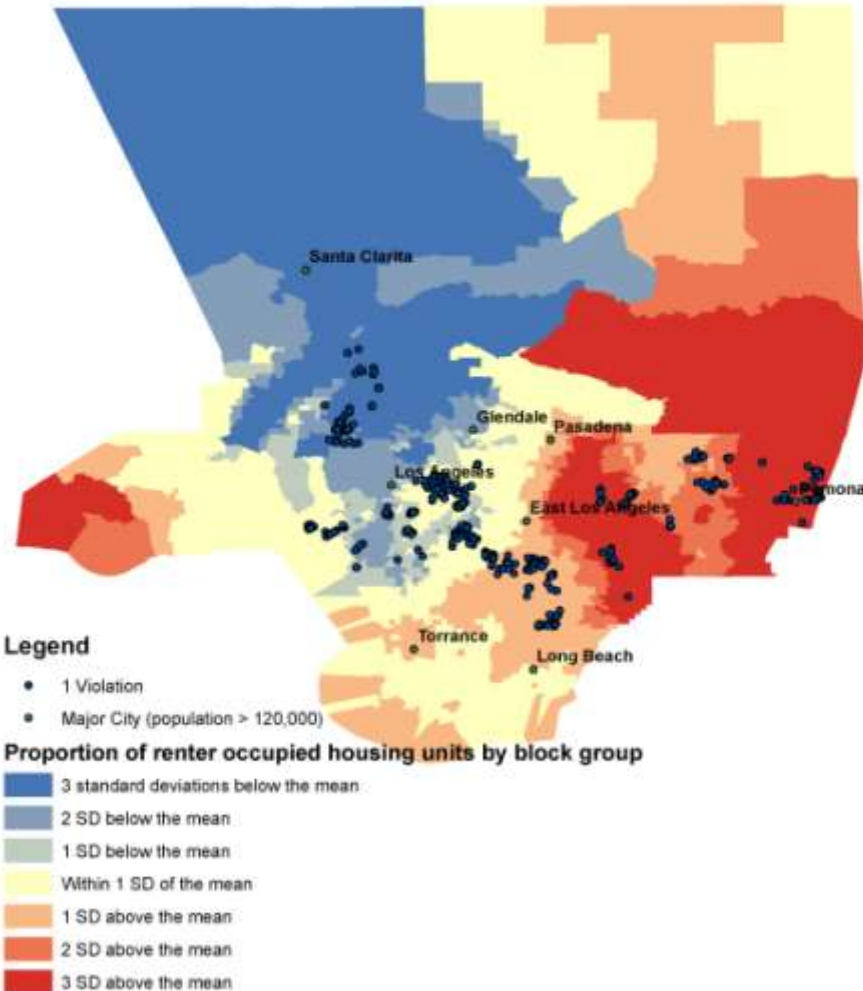
Legend

- Major City (population > 120,000)
- 1 Violation

Proportion of children below poverty, aged 0-5 by block group

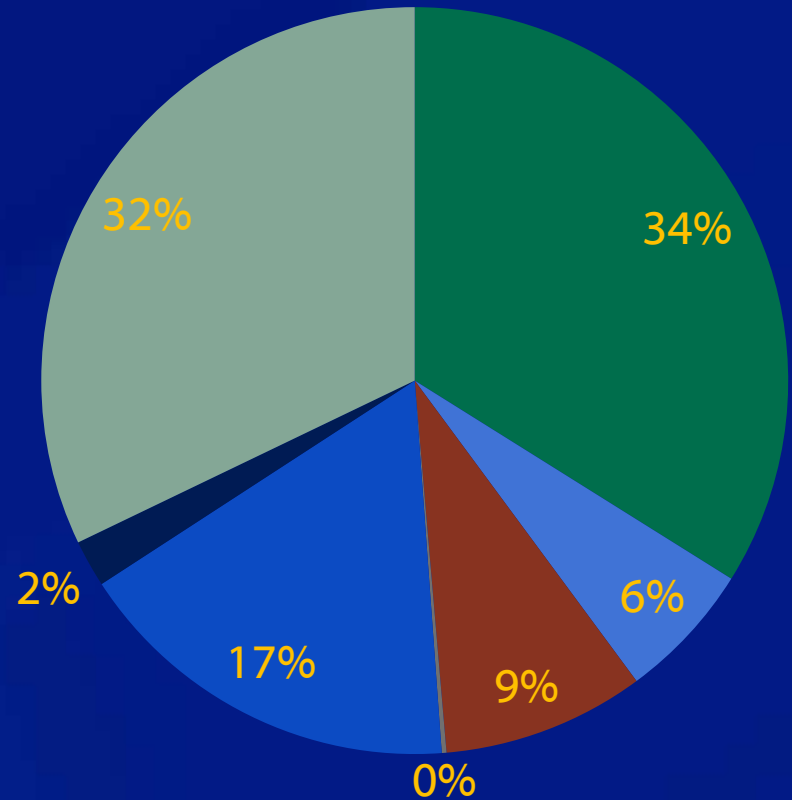
- 3 standard deviations (SD) below the mean
- 2 SD below the mean
- 1 SD below the mean
- Within +/- 1 SD of the mean
- 1 SD above the mean
- 2 SD above the mean
- 3 SD above the mean

Proportion of renter occupied housing units by block group
(Census 2000) and the top ten healthy home violations in Los
Angeles County, California (2008-2009)

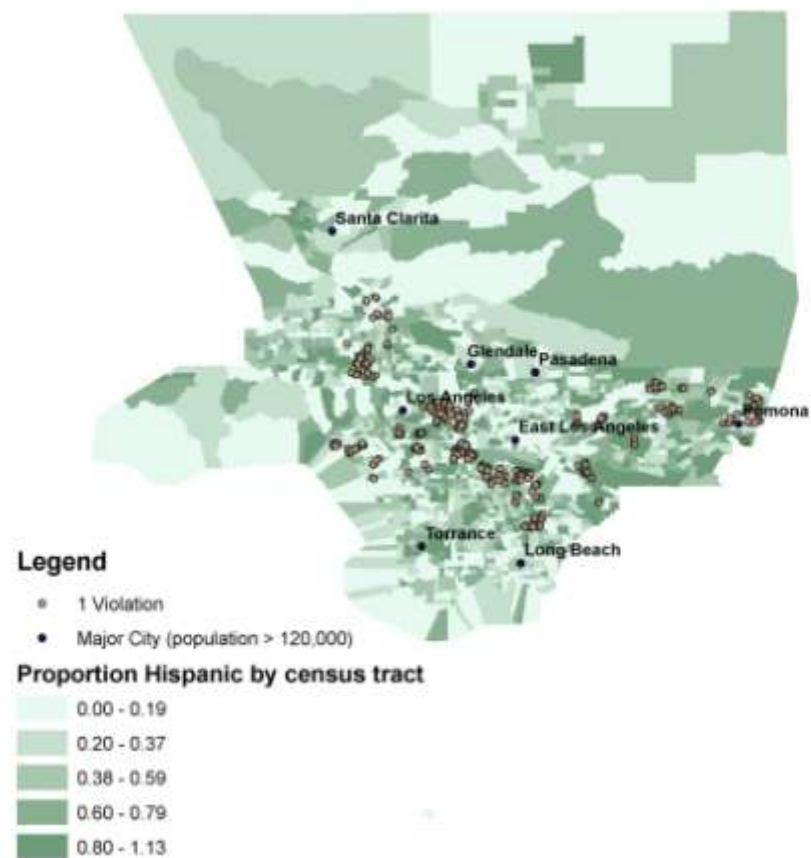


Los Angeles County Racial Description

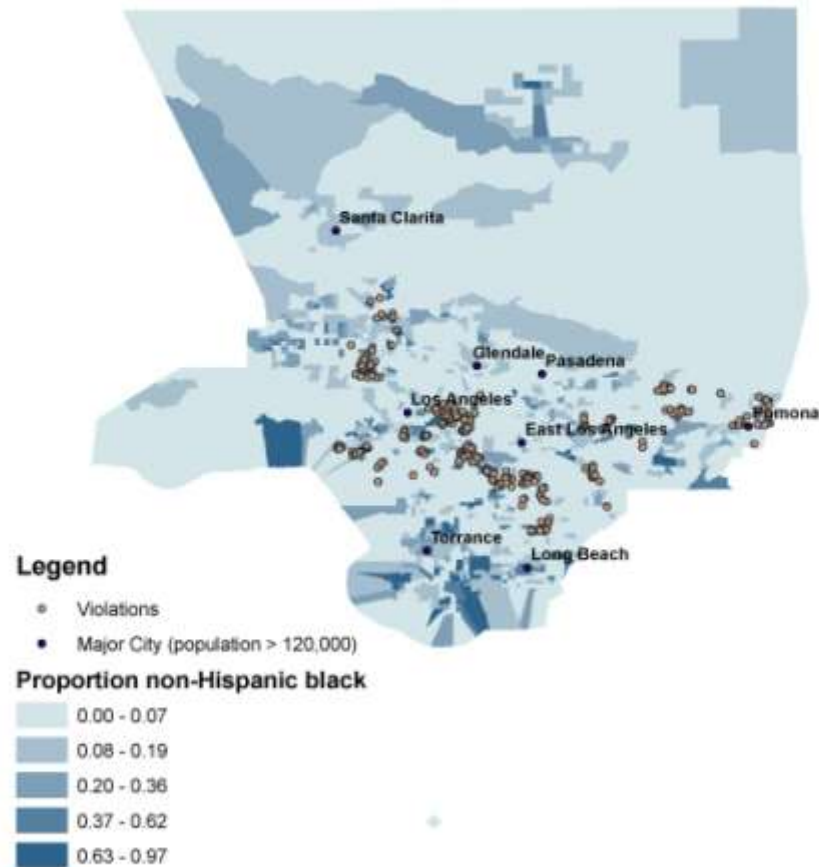
- White
- Black
- Asian
- Native Hawaiian/Other Pacific Islander
- Other
- Two or more
- Hispanic/Latino



Proportion of Hispanic population by census tract (Census 2000)
and top 10 healthy home violations in Los Angeles County,
California (2008-2009)



Proportion of non-Hispanic black population by census tract
(Census 2000) and top 10 healthy home violations in Los Angeles
County, California (2008-2009)



Results

- The L.A. County HHI project is a pilot program conducted to better understand and prevent housing-related injuries and morbidity.
- The most frequent violations by category involve walls, windows/ventilation, insects, sanitation and ceilings.
- The most frequent major violation is the lack of carbon monoxide detectors.
- HHIs are conducted in high-population areas.

Results

- One-third of L.A. County is Hispanic.
- HHI demographics
- Home violations appear at a disproportionate percentage for the Hispanic population (1/2 of all violations in high proportion areas).

Conclusions

- Top violations appear to be evenly distributed based on income, rental status and population. However, violations may be occurring more frequently in high-Hispanic proportion areas.
- Interventions should be developed toward households with the most frequent violations.

Next Steps

- Analyze HHI and census data geographically at a more localized level to examine patterns/trends
- Examine routine inspections database for comparison to HHI database
- Focus analysis on most frequent violations and determine relationship to housing and census data

References/Resources

- Centers for Disease Control and Prevention
- US Department of Health and Human Services
- Environmental Protection Agency
- California Department of Public Health
- California Department of Health Services
- County of Los Angeles-Department of Health Services
- Healthyhomestraining.org
- USPS.com
- US Census Bureau

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

National Center for Environmental Health

Division of Emergency and Environmental Health Services

