Utilizing Geographic Information Systems (GIS) Technology in the HIV Prevention Planning Process

Successes and Lessons Learned in Los Angeles County

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What is GIS?

- Collection of tools for capturing, storing, analyzing and displaying geographically referenced information

- Includes:
  - Hardware (computers, servers, etc.)
 - Software (ArcGIS, MapInfo, etc.)
 - Geographic data

What can we do with GIS?

- Analyze relationships within geographic areas
  - HIV risk
  - HIV positivity
  - Service utilization and barriers
- Target services at smaller levels of geography
 - Zip code
  - Census tract

Data Layers
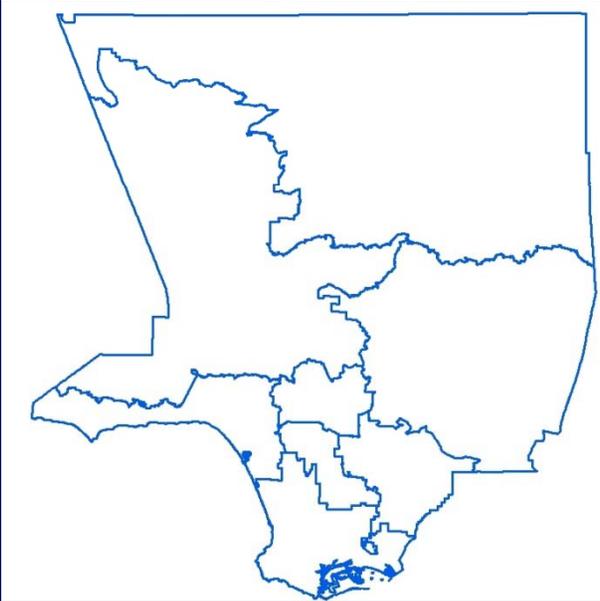
Basic Geography
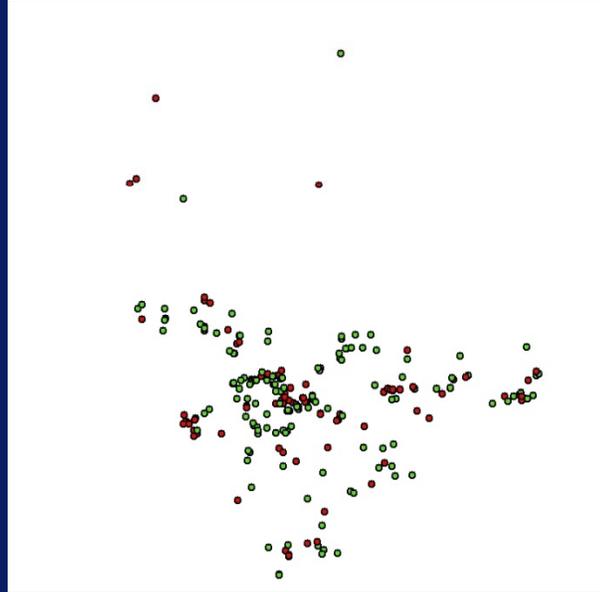
Geocoded Data
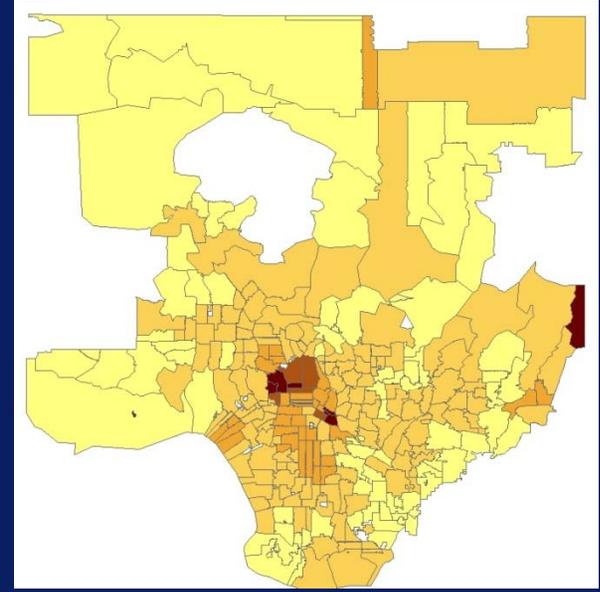
Quantities per Geography

Overlaying Data Layers

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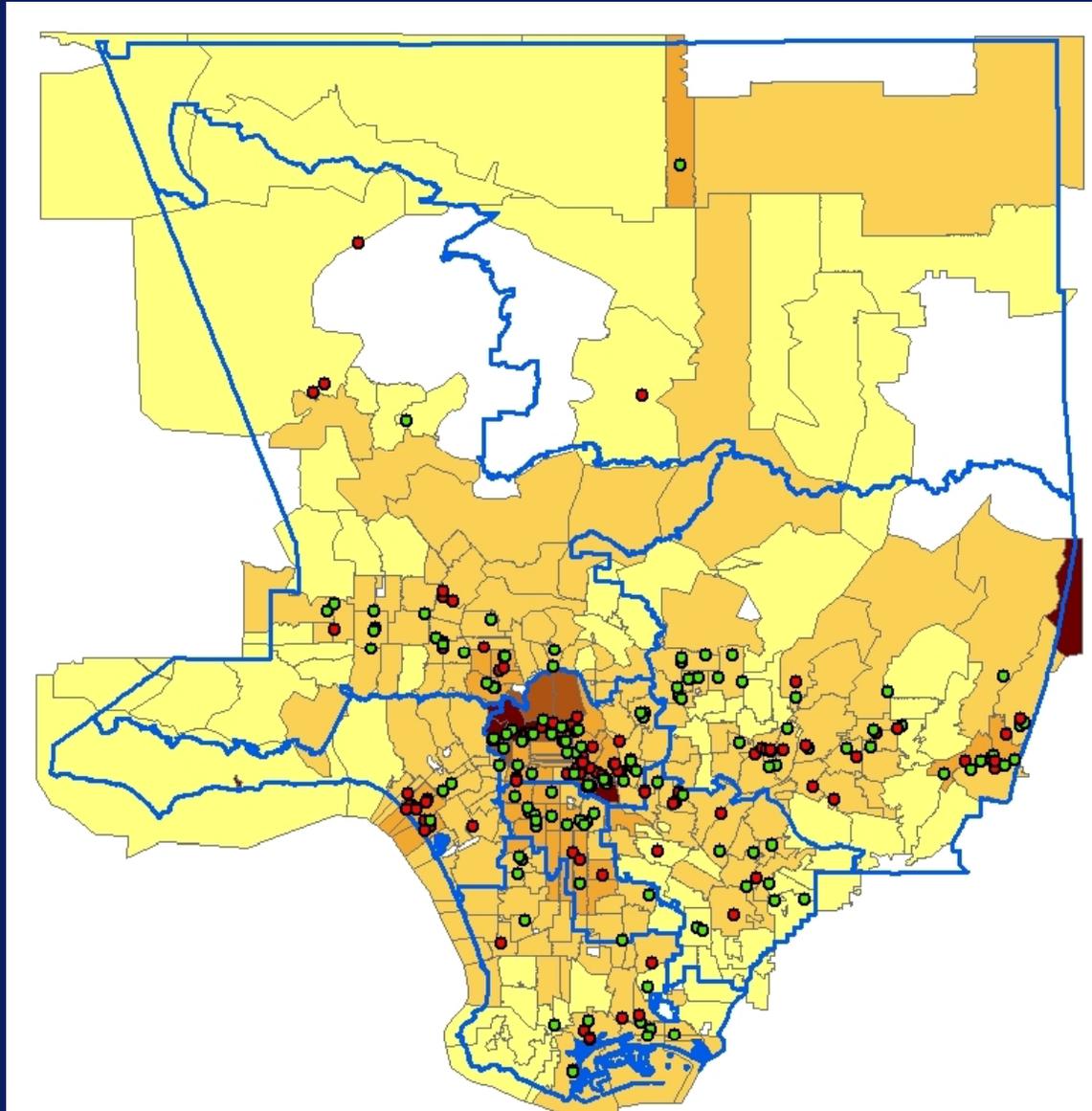
Density Maps
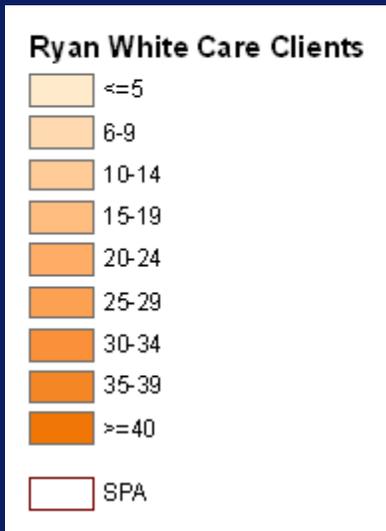
Small-area Geography Focus
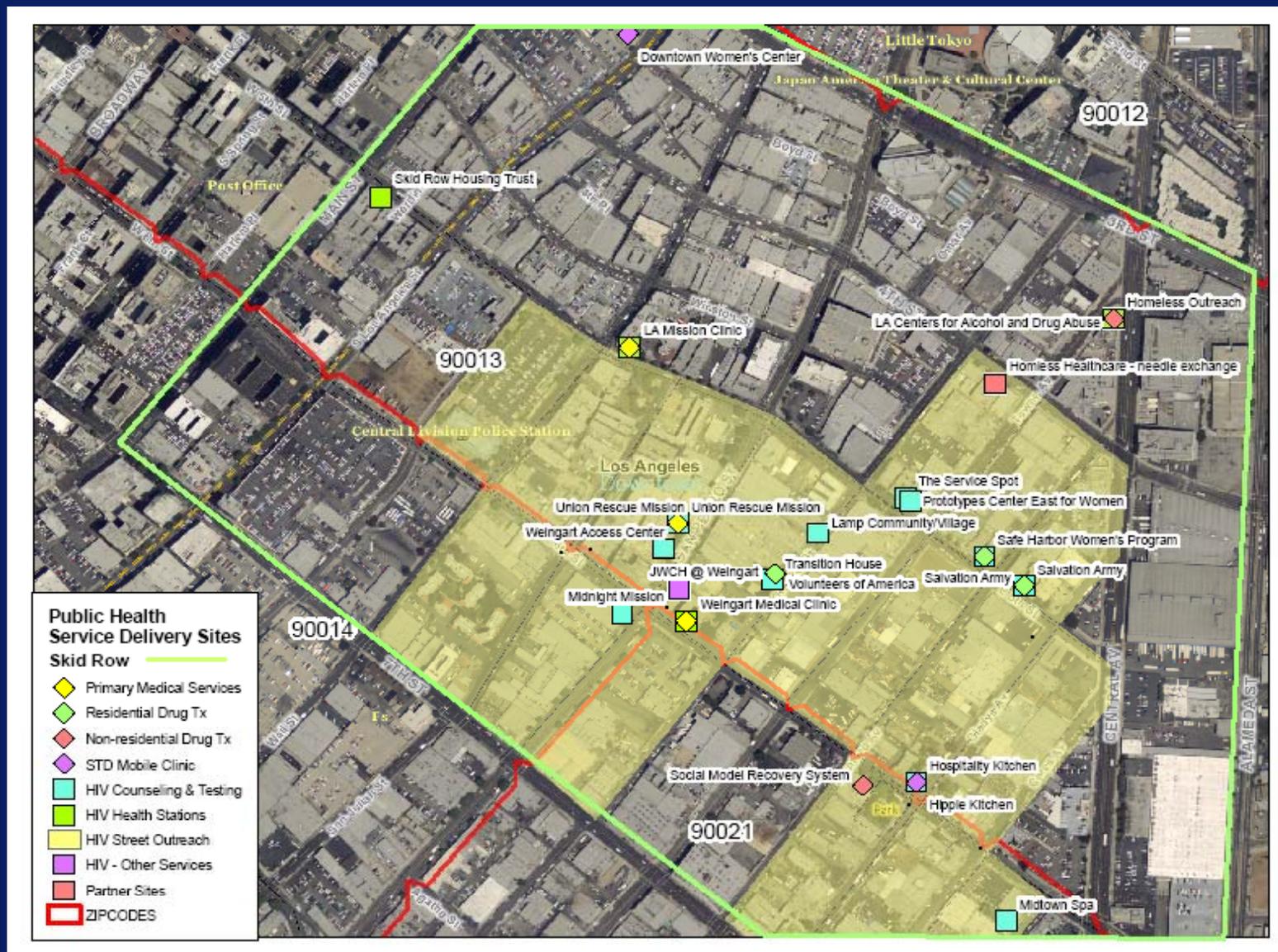
Los Angeles County

Square Miles: 4,086
Population[1]:   10.3 Million

Latino/a	47%
White	28.9%
Asian/PI	12.6%
African-American	9.0%
Native American	0.3%

Proportion of:
- California Population[2]:   29%
- California AIDS Cases[3]: 36%
- U.S. AIDS Cases[3]:   5%

Living with HIV/AIDS[3]:
    60,000 (Estimated)

[1]United Way, Los Angeles (2008)
[2]U.S. Department of Commerce (2008)
[3]Los Angeles County HIV Epidemiology Program (2008)

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SPA 1: Antelope Valley

SPA 2: San Fernando

SPA 3: San Gabriel

SPA 5: West

SPA 4: Metro

SPA 7: East

SPA 6: South

SPA 8: South Bay

Los Angeles County

Connecticut
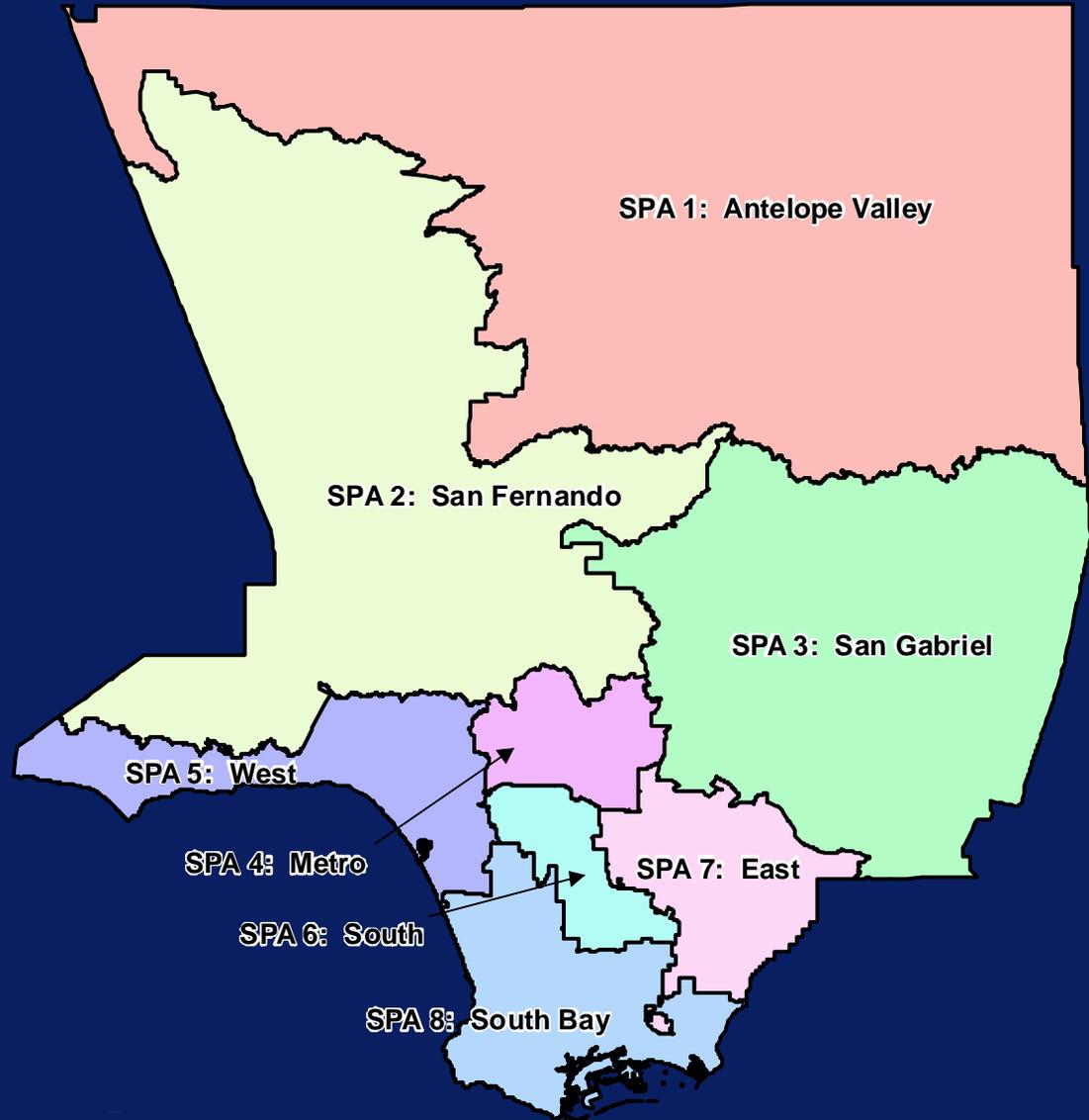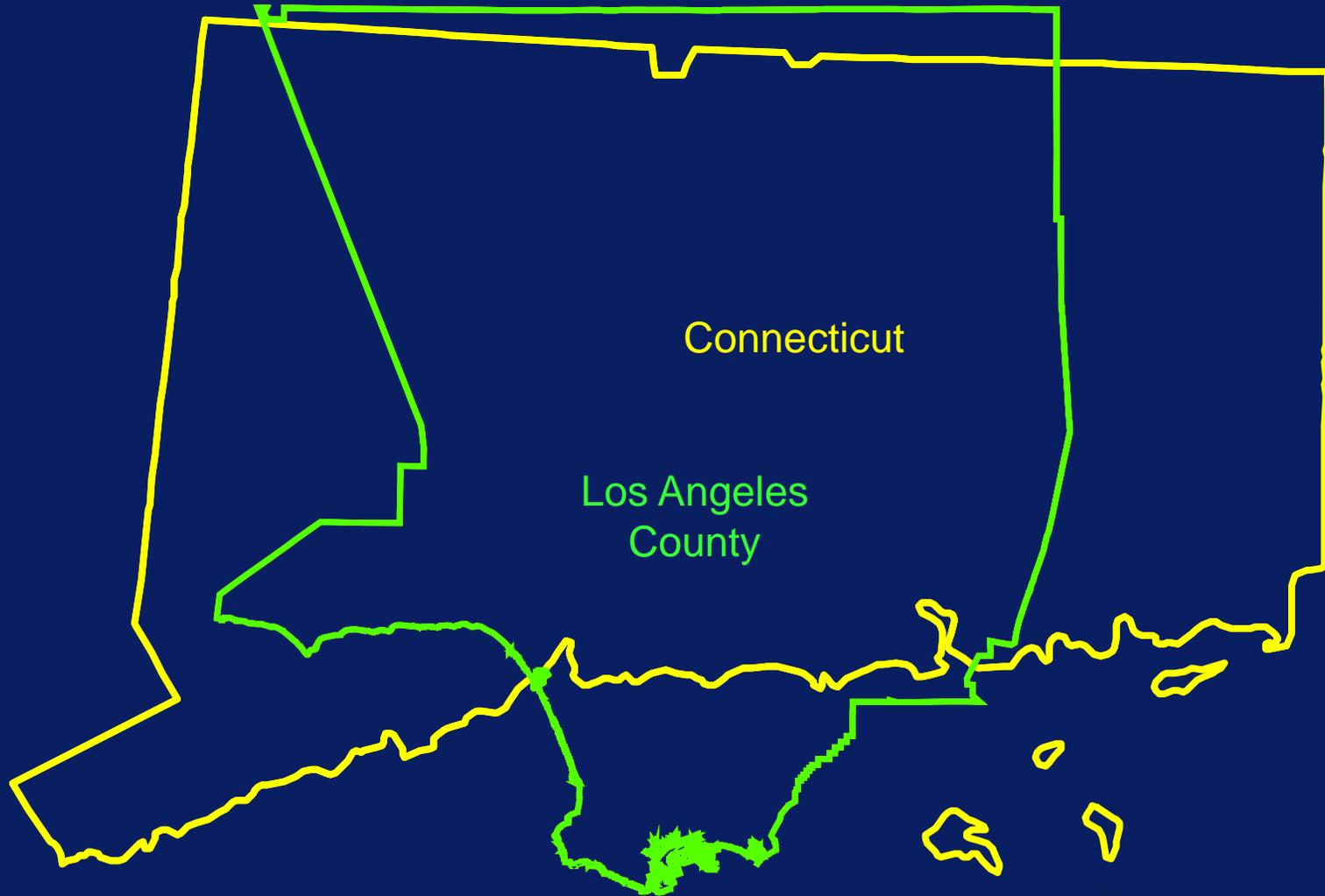
Los Angeles
County

Strategizing Prevention Services

- Unique challenges in strategizing prevention services in Los Angeles County

  - Land area

  - Population Diversity

- County divided into 8 Service Planning Areas (SPAs)

- GIS was identified as a tool for improved prevention services planning beyond the SPA level

2009-13 HIV Prevention Plan

- First HIV Prevention Plan for Los Angeles County to use results from GIS analyses

- Two sources of geographic data used

  - Los Angeles Coordinated HIV Needs Assessment (LACHNA)

  - HIV Counseling and Testing data

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Los Angeles County HIV Needs Assessment

- Conducted in 2007 as part of the Community Services Assessment (CSA)
  - HIV Risk
  - Perceptions
  - Service Utilization
- Geographic data elements collected at census tract level
  - Home
  - Work
  - Hang-out
  - Services received

HIV Counseling and Testing

- Data include
  - HIV testing and testing history
  - HIV risk
  - Service referrals
- Geographic data elements collected at zip code level
  - Home
  - Services received

HIV Prevention Planning Process

- Analyzed both sources of data
  - HIV positivity/PLWHA
  - HIV risk behaviors
- Identified 40 highly-impacted zip codes within Los Angeles County for increased prevention focus
- Increased HIV testing
  - HIV Counseling and Testing Week
  - New testing services recommended

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Geographic Areas Identified for Increased Services
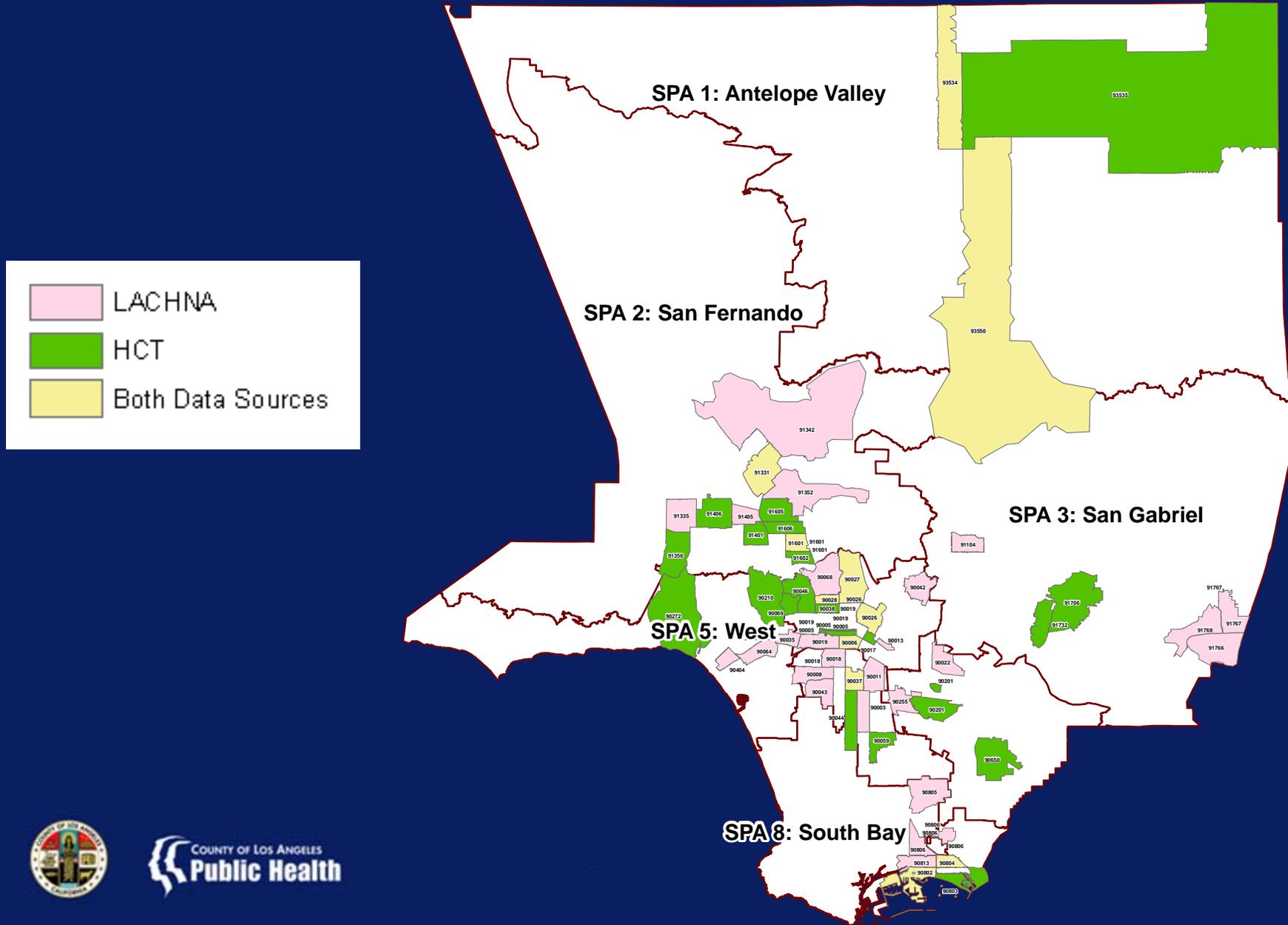
Challenges in Using GIS

- Must have good geographic data to start with
  - Data elements should be standardized
  - Missing information can skew results

- Confidentiality of identifiers
  - Cannot show geocoded addresses
    - Mask
    - Buffer
    - Quantities per geography

What's Next

- Continue to use GIS to plan for HIV prevention and care services by assessing
  - Service utilization patterns
  - Barriers to service access
  - Transportation challenges
  - Testing site capacity
  - Clinic capacity

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This presentation is available at

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