

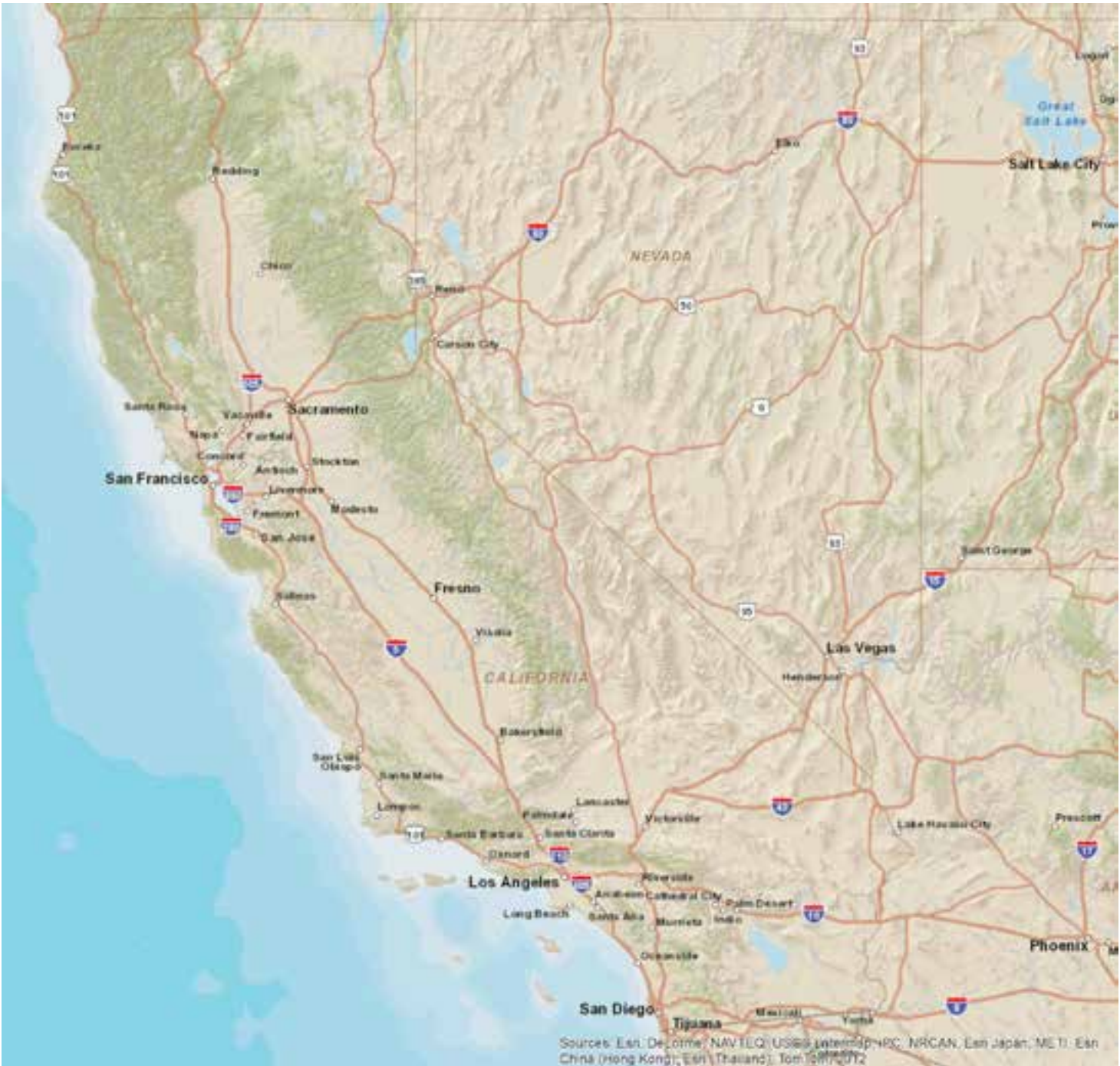
Fresno-Clovis Area Distressed Residential Properties: Where & Who?

Xiaoming Yang, PhD

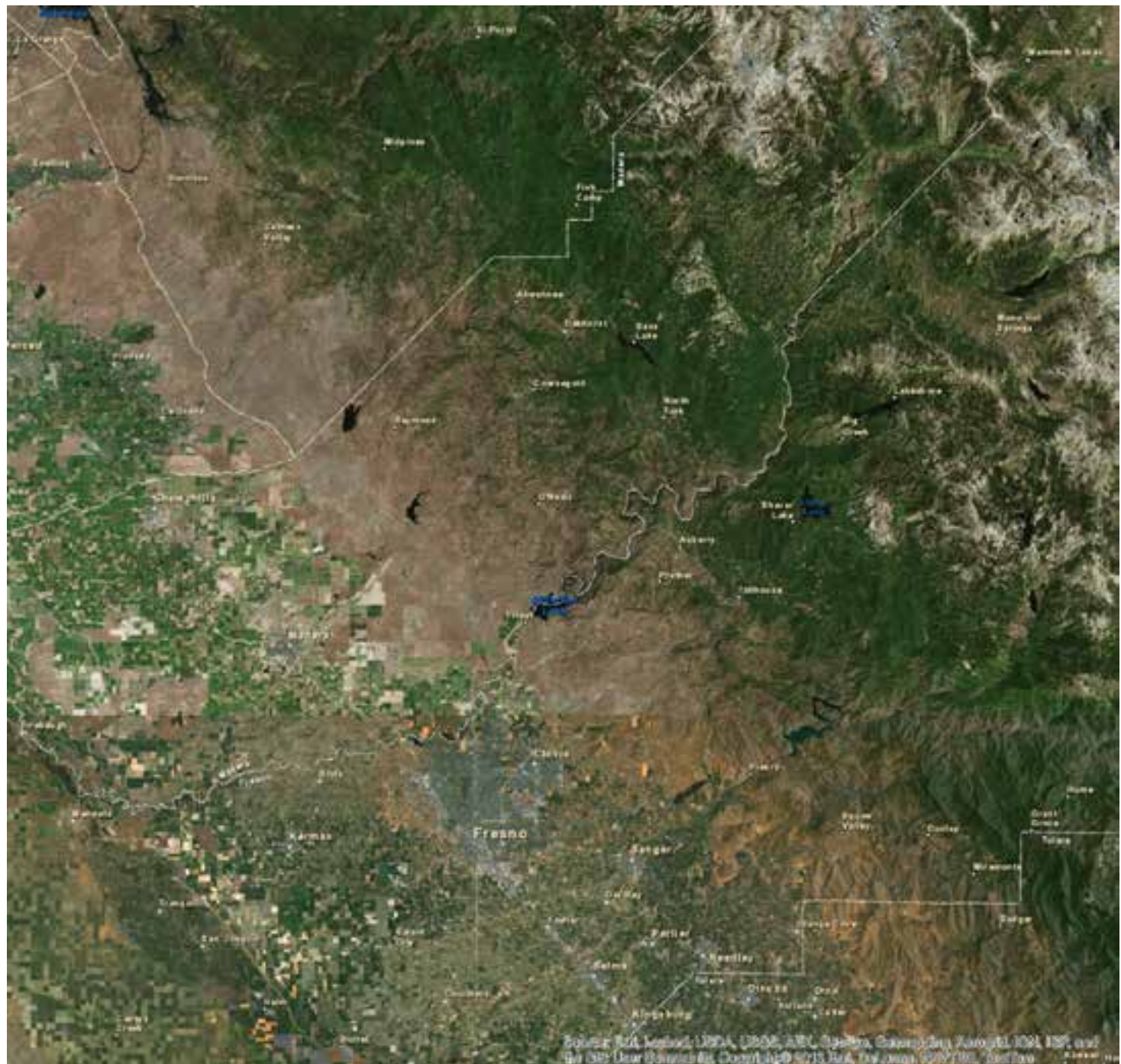
Andrew Hansz, PhD

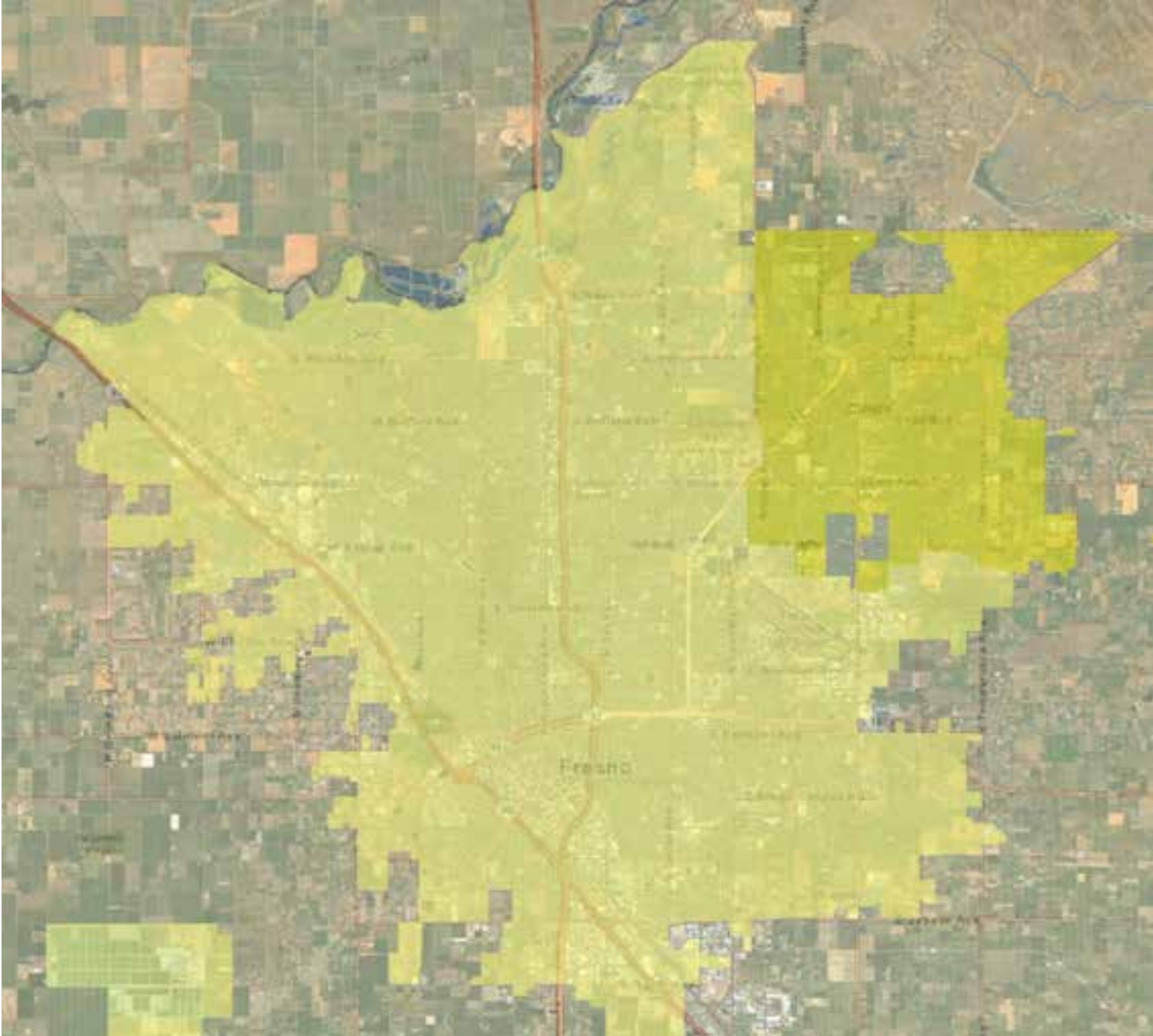


Fresno
California



Source: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri Thailand, Swisstopo





Source: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri, Swis, MEI, Eir, China, Aero, Kner, Eir, and other contributors 2017. Source: Esri, DeLorme, USGS, Intermap, iPC, NRCAN, Esri, Swis, MEI, Eir, China, Aero, Kner, Eir, and other contributors 2017. Source: Esri, DeLorme, USGS, Intermap, iPC, NRCAN, Esri, Swis, MEI, Eir, China, Aero, Kner, Eir, and other contributors 2017. Source: Esri, DeLorme, USGS, Intermap, iPC, NRCAN, Esri, Swis, MEI, Eir, China, Aero, Kner, Eir, and other contributors 2017.

Fresno-Clovis Area

- City of Fresno
 - The largest city in the Central Valley.
 - The 5th largest city in California.
 - The 34th largest city in the US.
 - Population 502,303 (2010 census) in 104.4 sq. mi.
- City Of Clovis
 - Population 97,218 (2010 census)
 - Area 22.03 sq. mi.

Fresno-Clovis Area

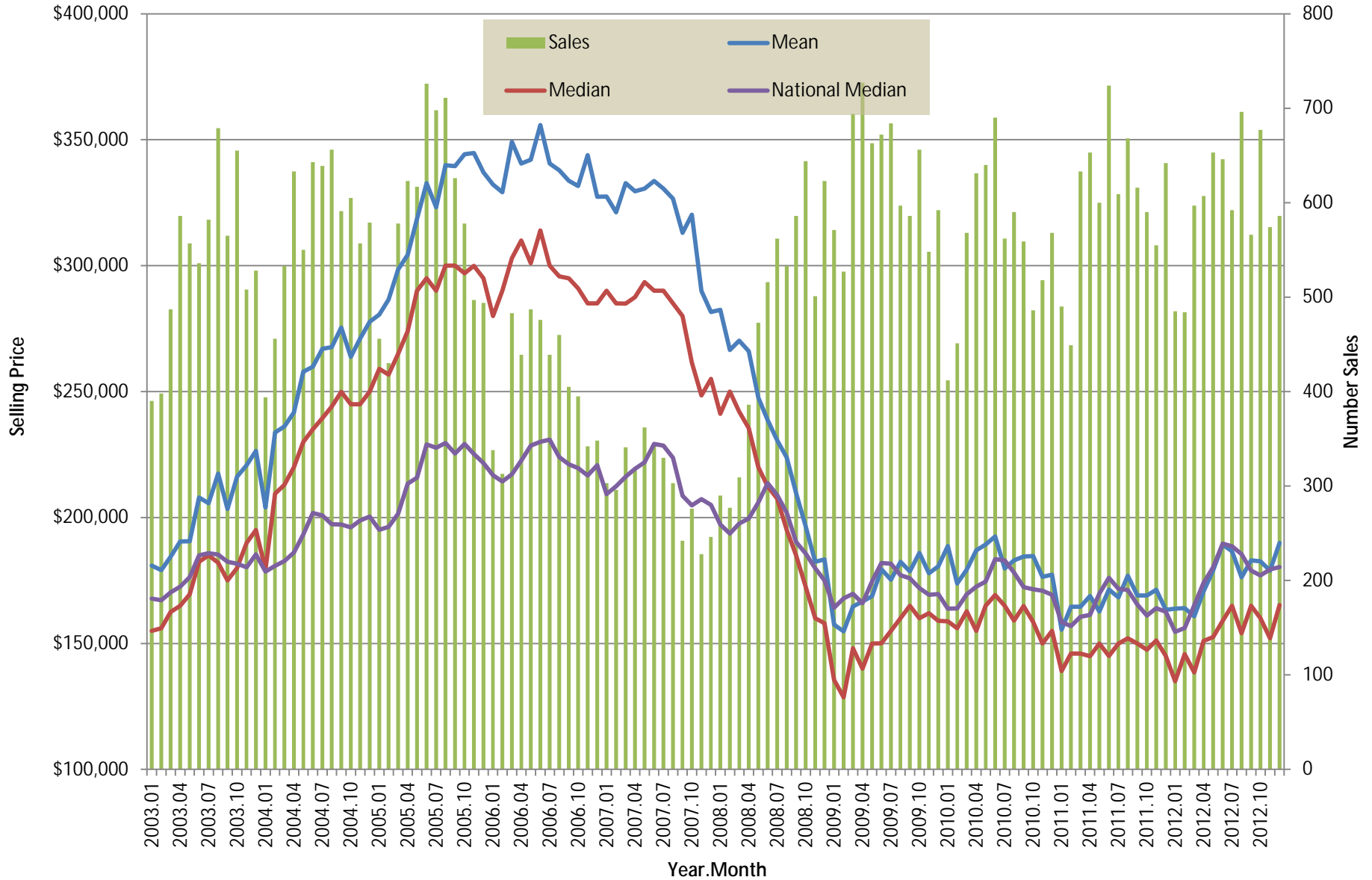
- The area is the economic hub of San Joaquin Valley (southern eight counties of the Central Valley).
- The unincorporated area and rural cities surrounding the area remain predominantly tied to large-scale agricultural production.

Fresno-Clovis Area

- Unemployment rates
 - Feb. 2006: 9.0% (CA 5%)
 - Feb. 2010: 17.4% (CA 12.4%)
 - Feb. 2014: 12.7% (CA 8.1%)
- Top distressed property market
 - Rank 14th in 2007 (CNNMoney.com)
 - Rank 10th in 2011 (MSN Real Estate)
- 29.5% Homes with negative equity (18.8% US Avg) (Mar 31, 2014. zillow.com)

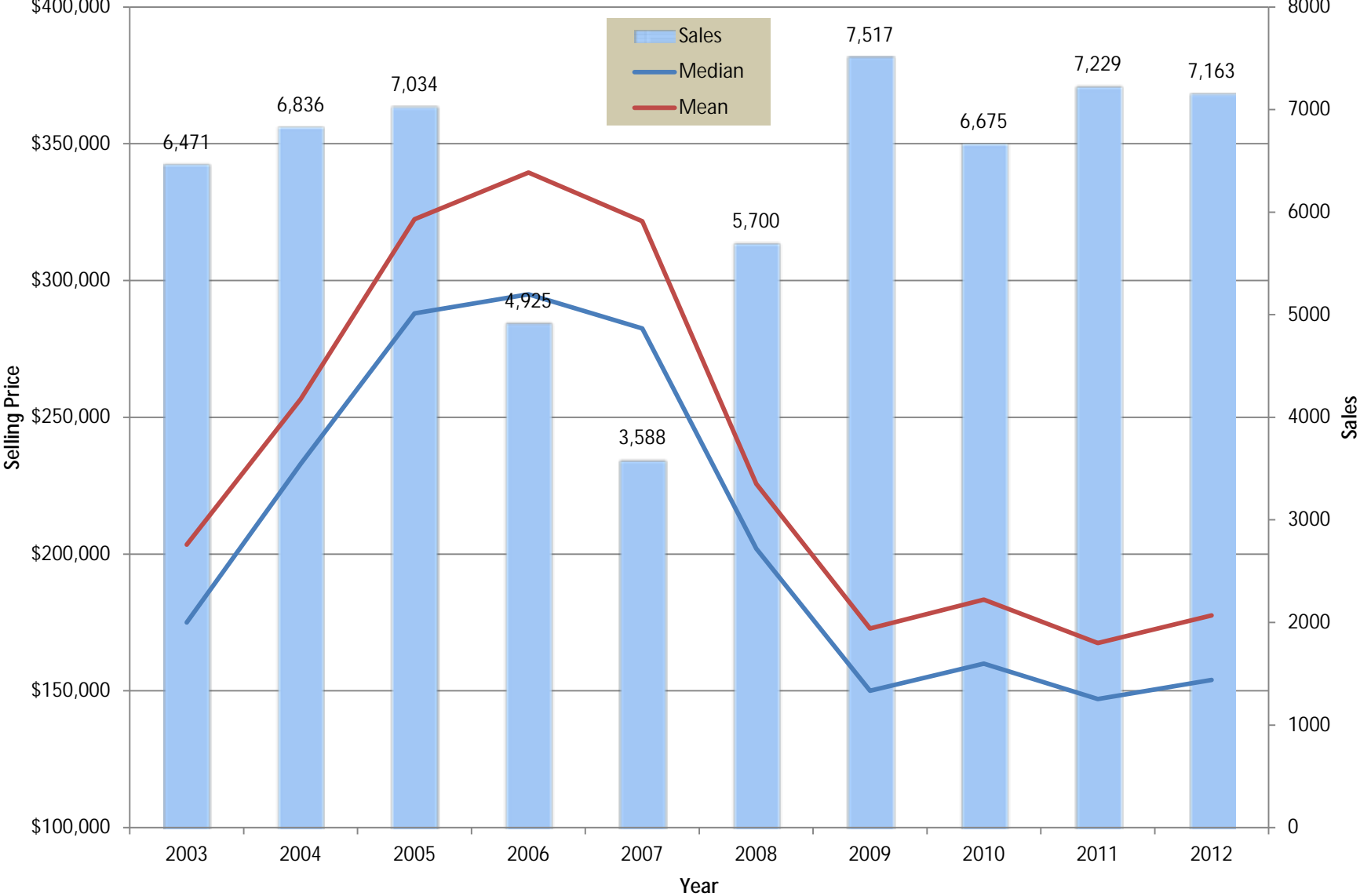
Sales and Selling Price

2003 - 2012 By Month



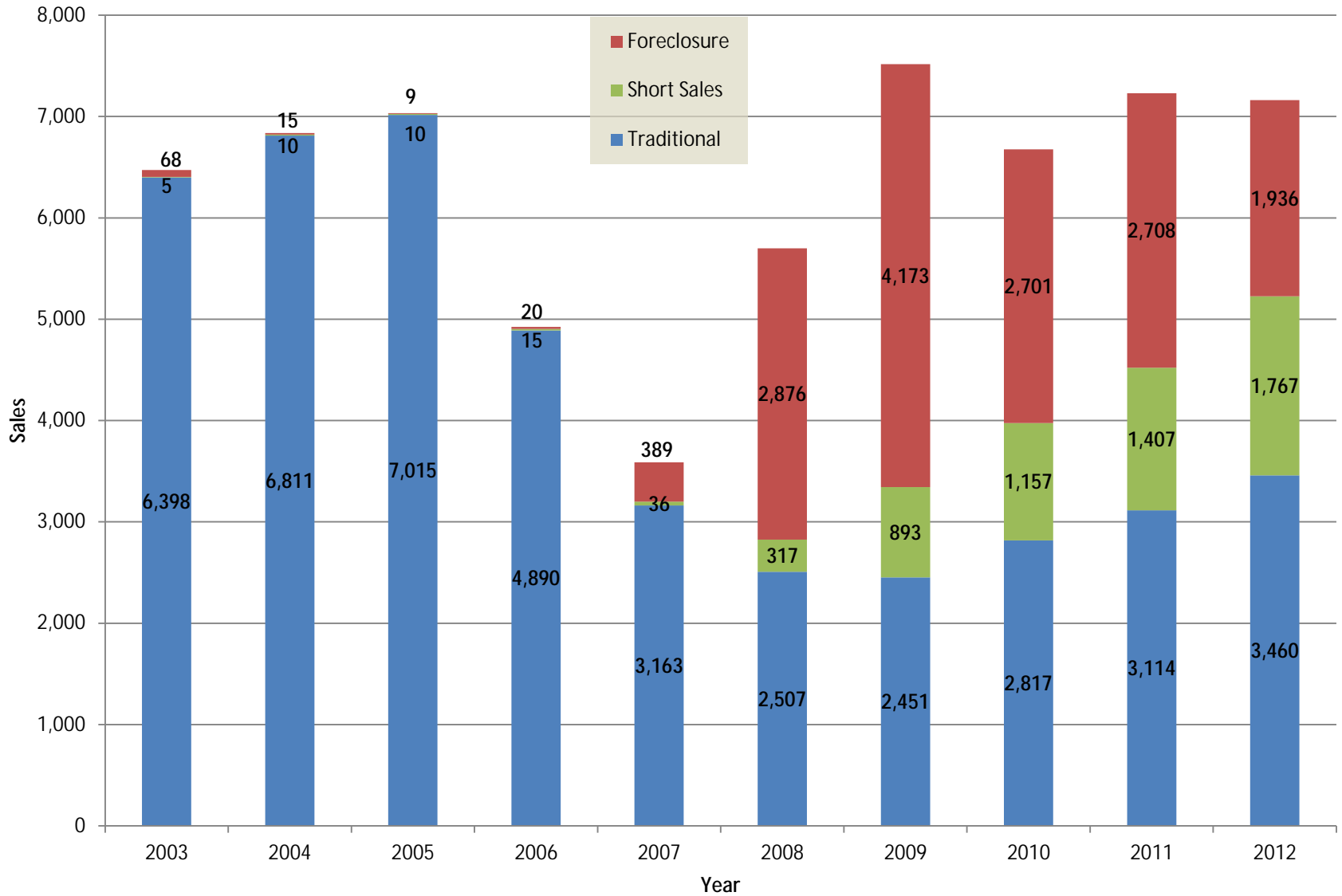
Sales and Selling Price By Year

2003 - 2012



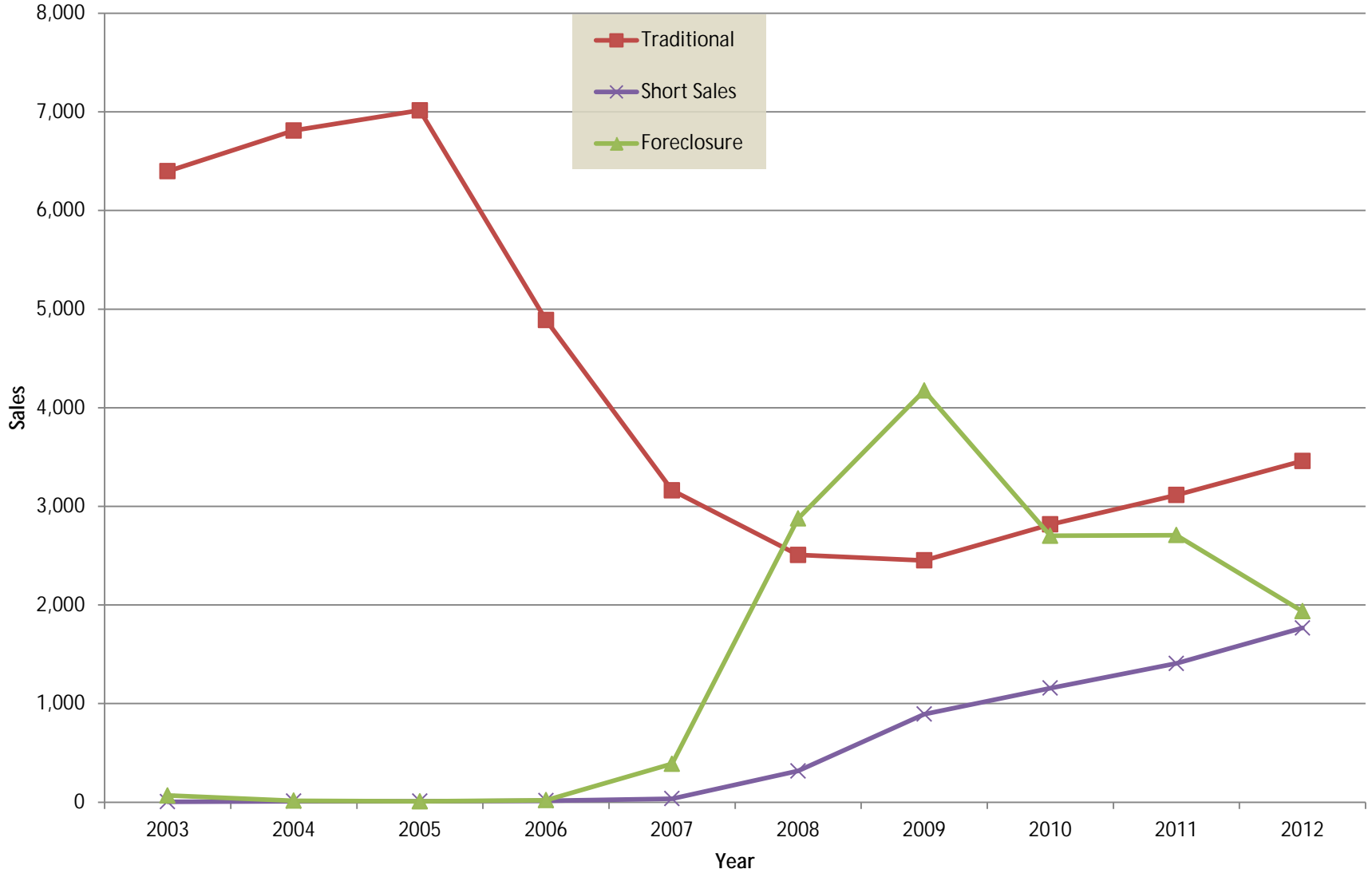
Numbers of Sales by Year and Type

2003 - 2012



Numbers of Sales By Year and Type

2003 - 2012



Study Objectives

- Are the distressed sales in the study area spatially clustered?
- If yes,
 - is the clustering becoming more or less intense over time?
 - where are the clusters?
- What are the social-economic characteristics of the clusters?

Study Area



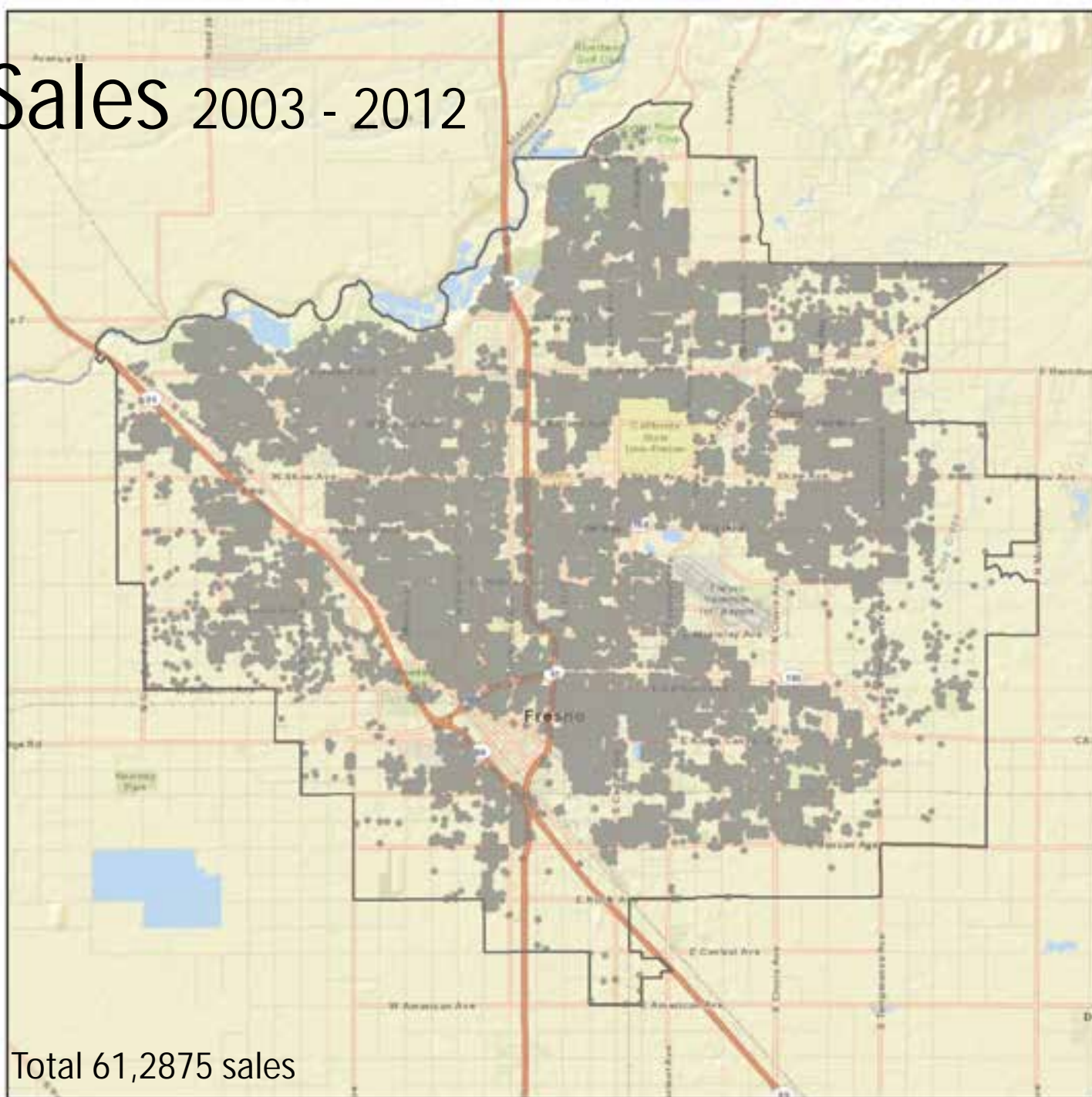
Numbers of Sales in the Study Area by Year and Type

2003 - 2012



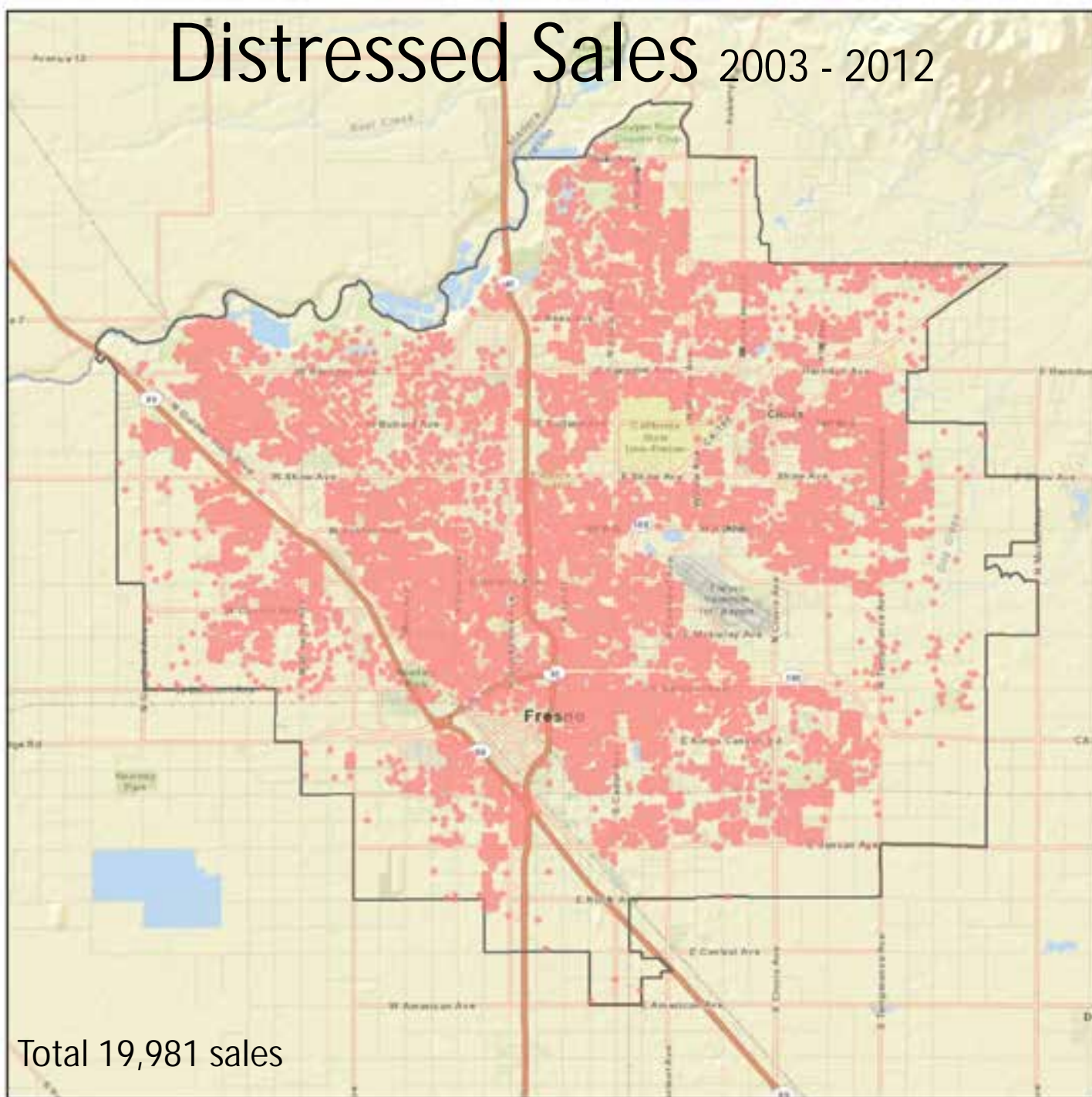
Total sales inside the study area: 61,287

All Sales 2003 - 2012



Total 61,2875 sales

Distressed Sales 2003 - 2012



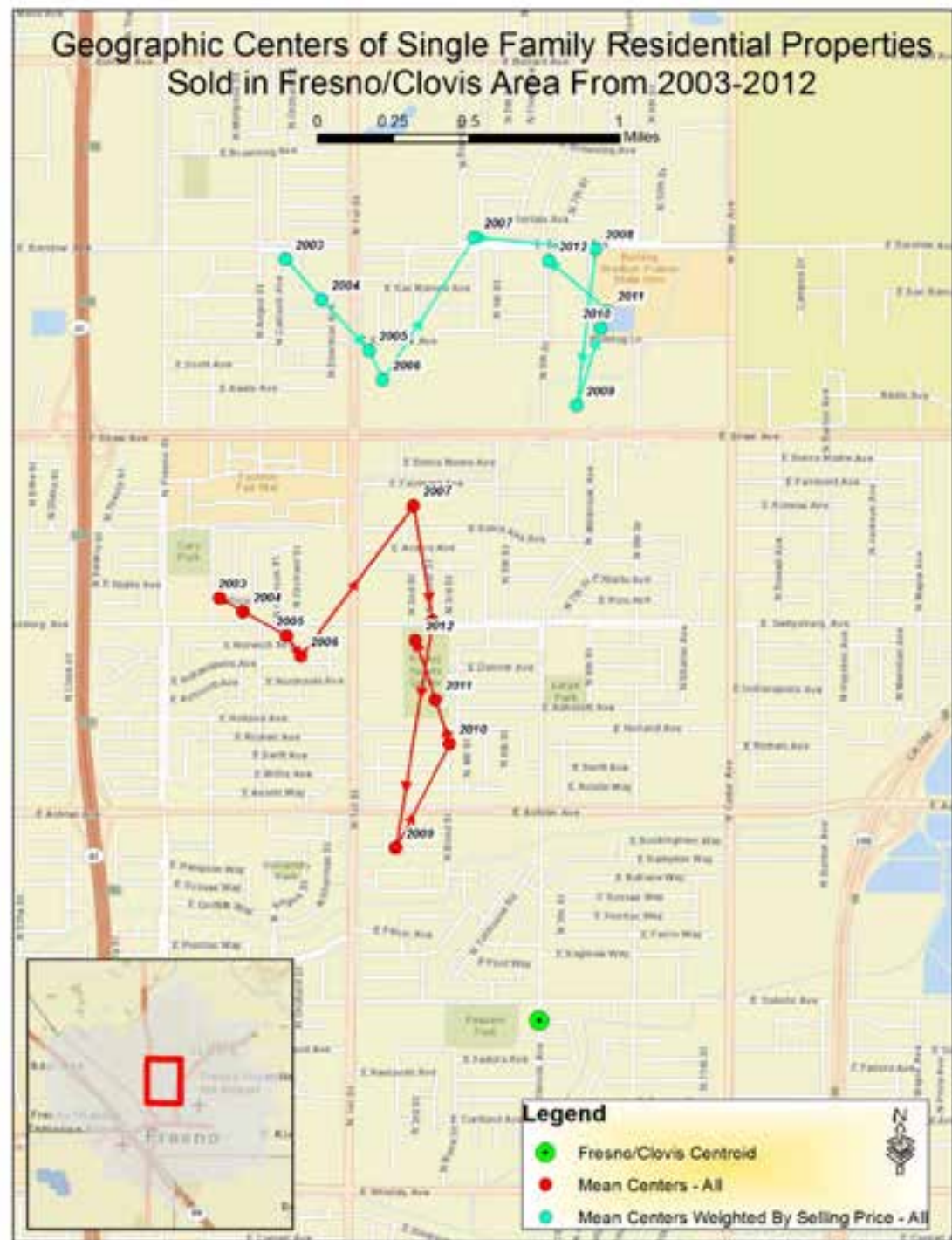
Total 19,981 sales

Measuring Geographic Distributions

- Mean Center
 - Identifies the geographic center (or the center of concentration) for the real estate sales.
 - Tracks changes in the distribution over time.
 - The weighted mean center extends mean center to be weighted by sale price.

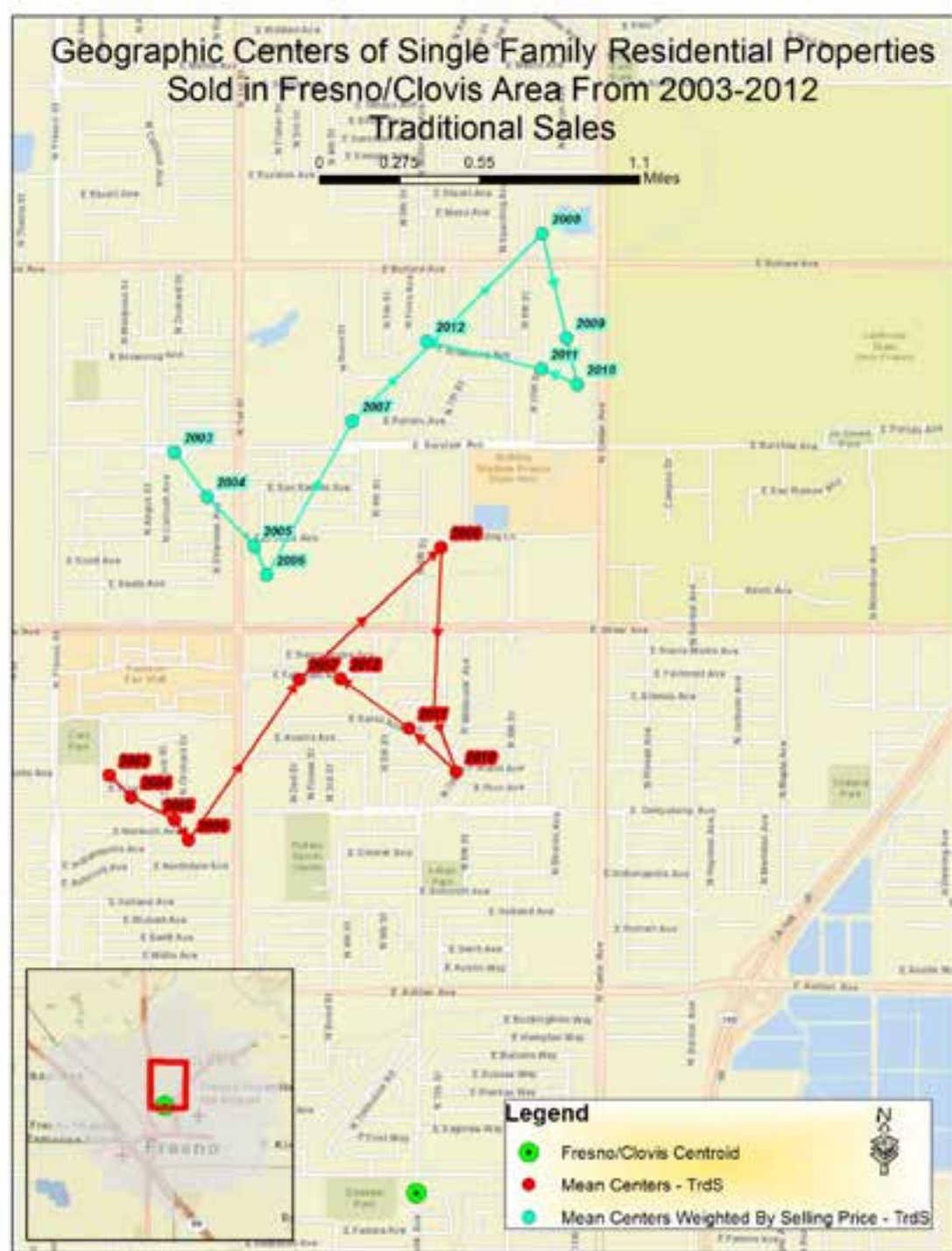
Centers – All Sales

2003-2012



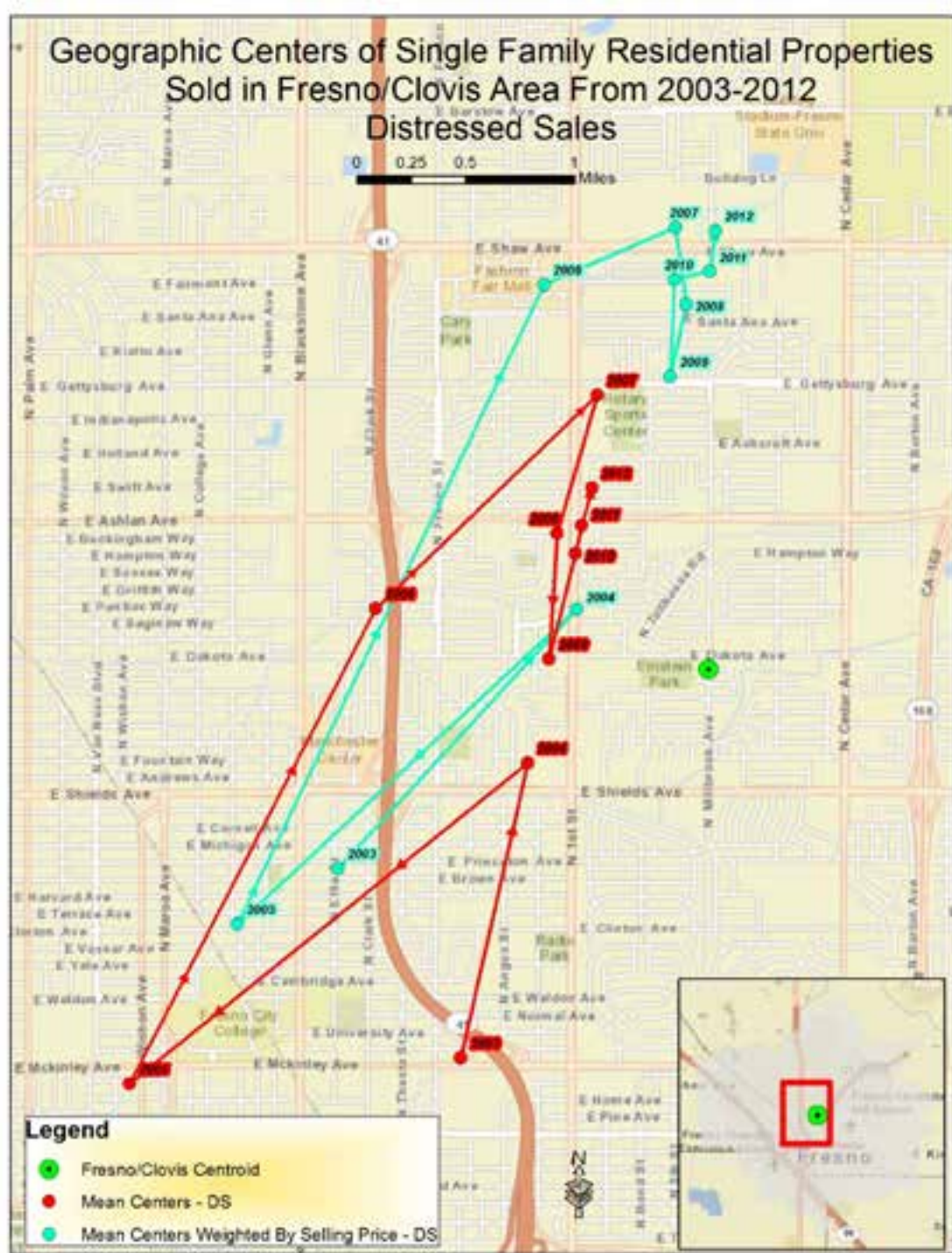
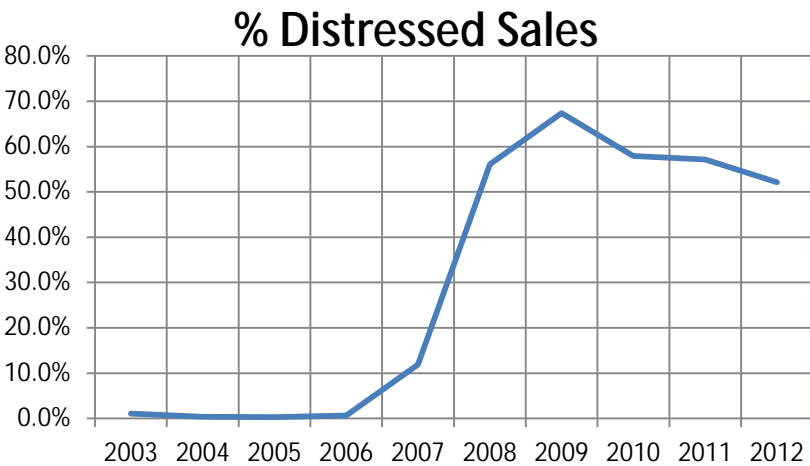
Centers – Traditional Sales

2003-2012



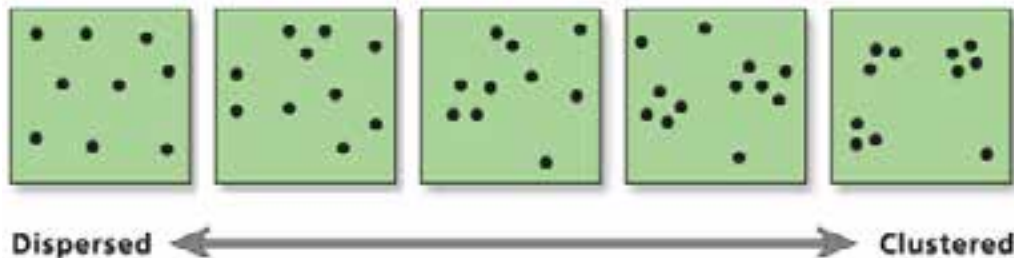
Centers – Distressed Sales

2003-2012



Cluster Analyses

- Identifying geographic patterns
 - It help us to understand how distressed sales
 - It answers questions such as,
 - "Are the distressed sales in the study area spatially clustered?" and
 - "Is the clustering becoming more or less intense over time?".



Nearest Neighbor Ratio: 1.159375

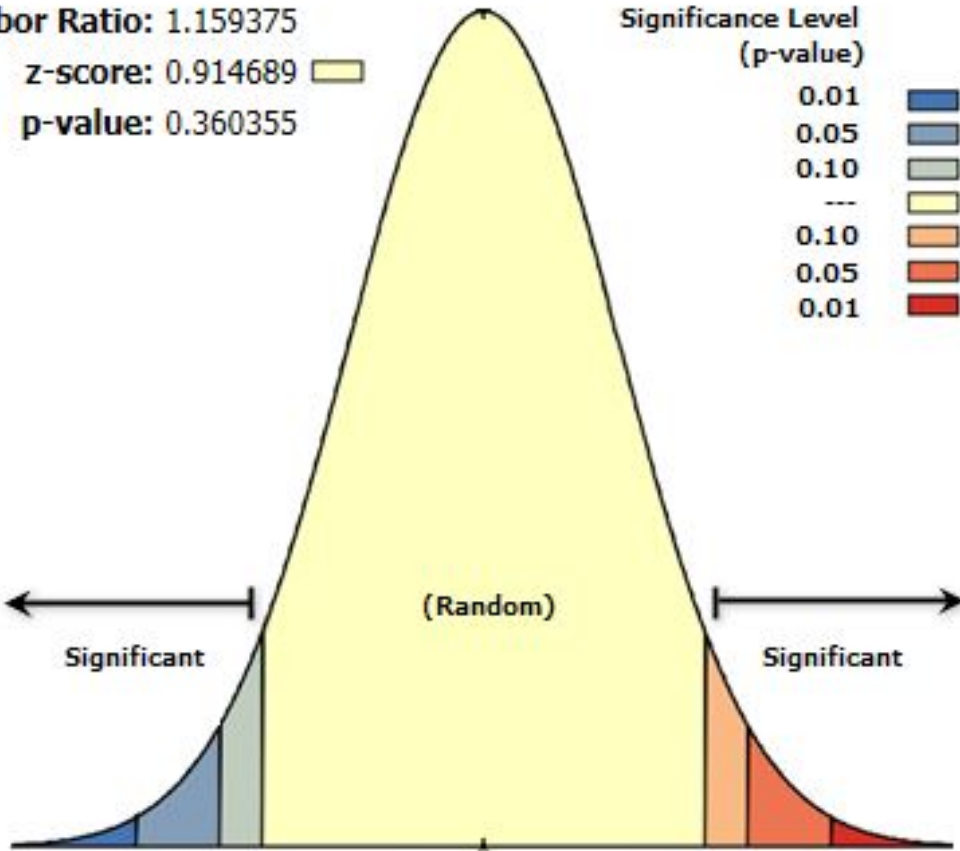
z-score: 0.914689

p-value: 0.360355

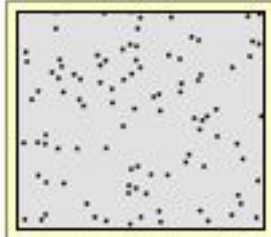
Significance Level (p-value)

Critical Value (z-score)

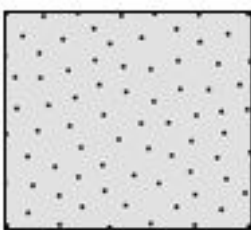
0.01	< -2.58
0.05	-2.58 - -1.96
0.10	-1.96 - -1.65
---	-1.65 - 1.65
0.10	1.65 - 1.96
0.05	1.96 - 2.58
0.01	> 2.58



Clustered

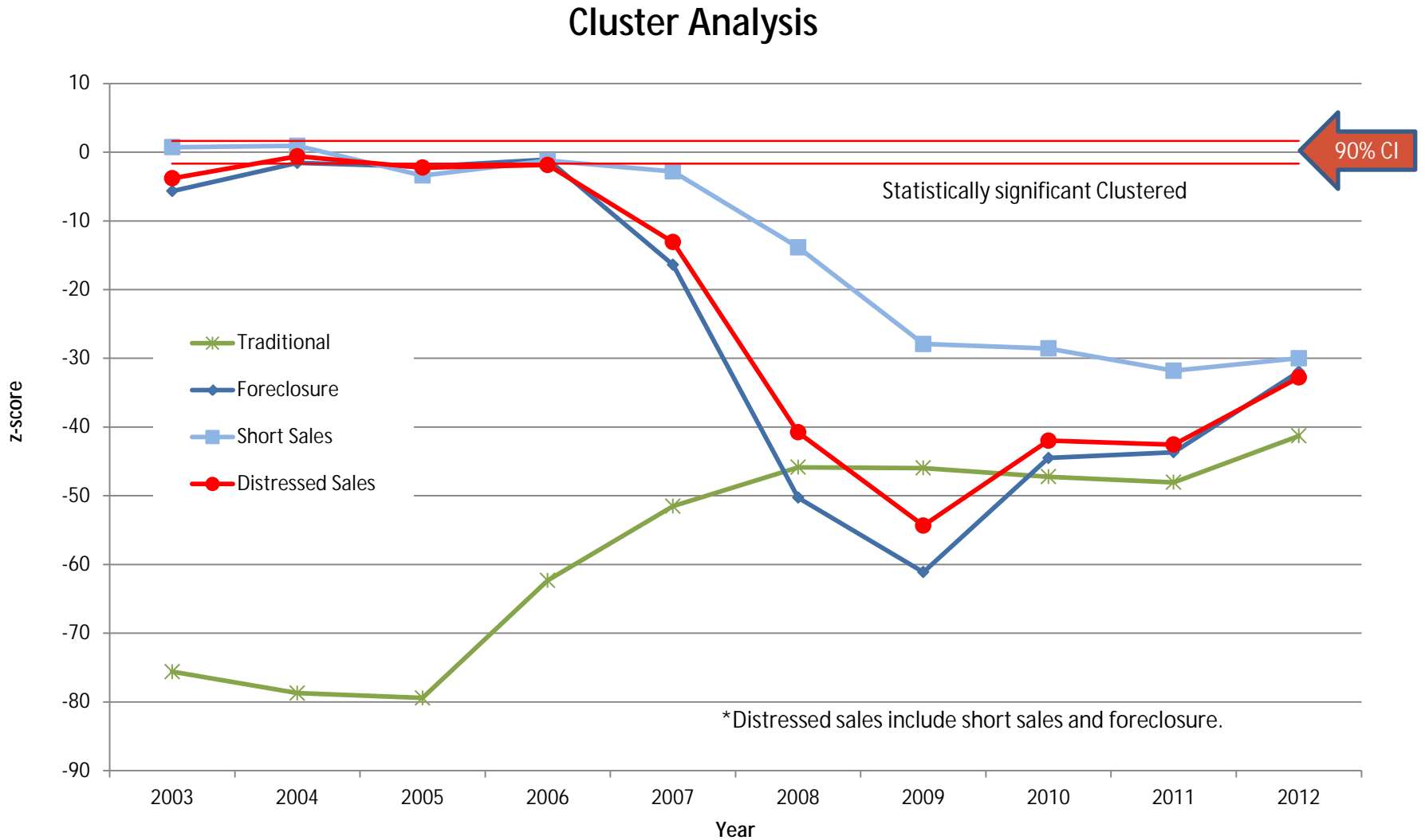


Random



Dispersed

Cluster Analysis



Where are the Clusters?



Fishnet Map - Number of Distressed Sales within a Quarter Mile

Number of Distressed Sales 0 1-5 6-10 11-15 16-25



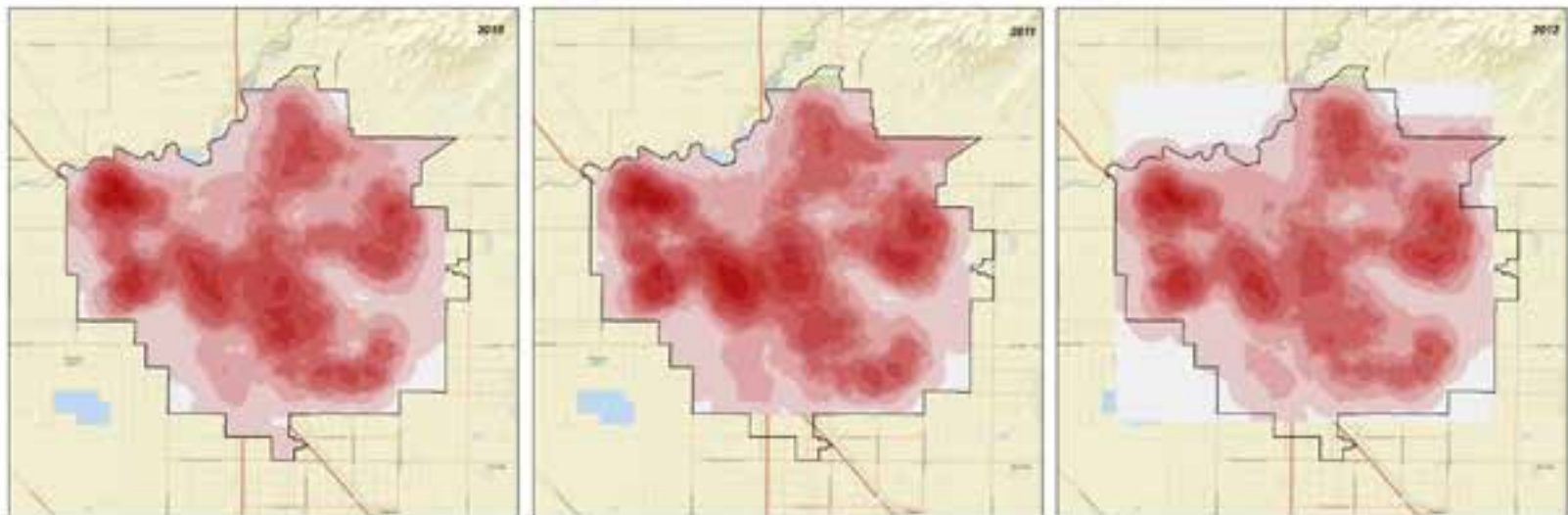
Where are the Clusters?



Point Density Map - Number of Distressed Sales per Square Mile

Number of Distressed Sale per Sq. mile

0	1 - 10	11 - 20	21 - 25	26 - 35	36 - 45	46 - 55	56 - 65	66 - 83
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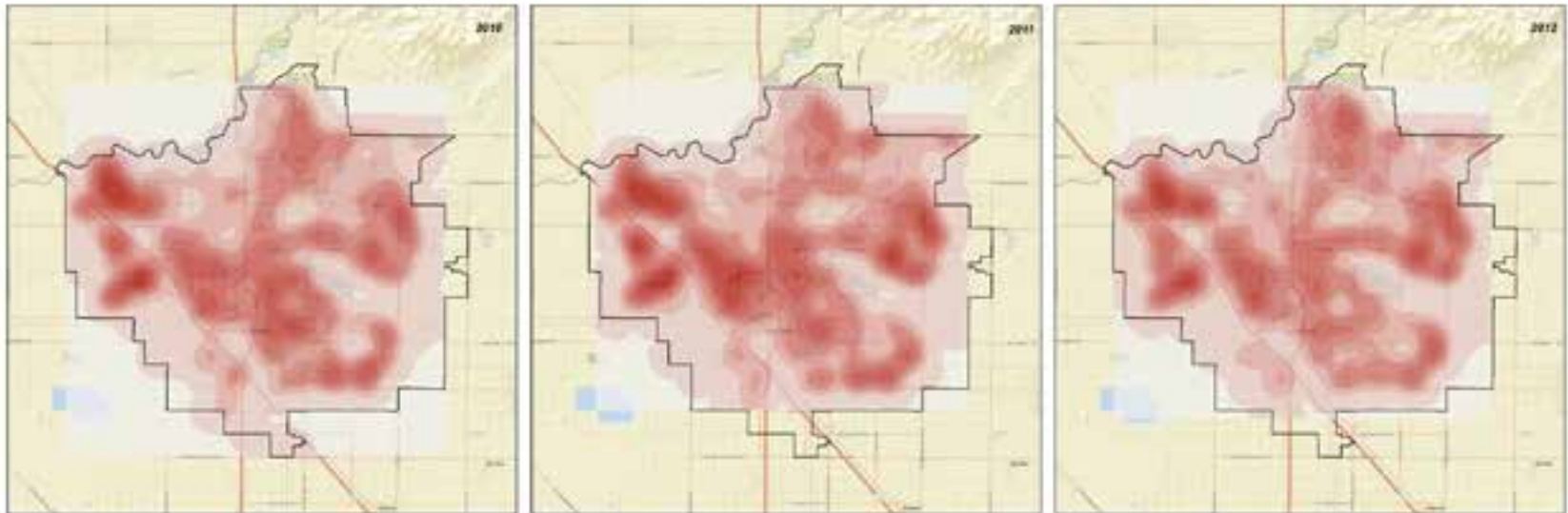
Where are the Clusters?



Kernel Density Map - Number of Distressed Sales per Square Mile

Number of Distressed Sale-KD per Sq. mile

0	1 - 10	11 - 20	21 - 25	26 - 35	36 - 45	46 - 55	56 - 65	66 - 83
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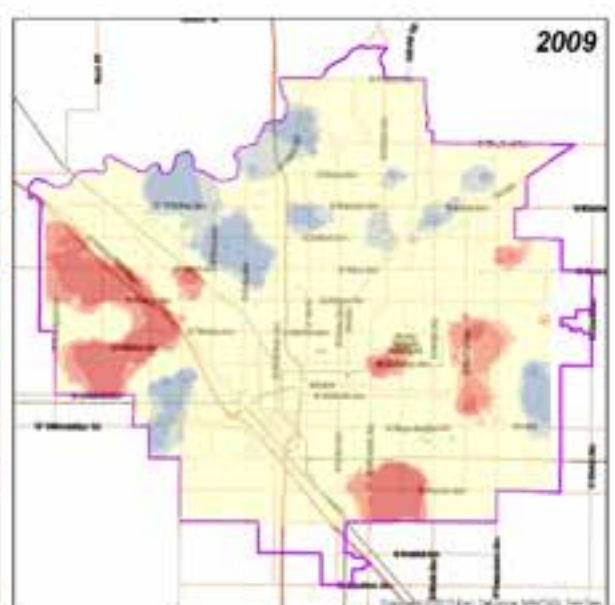
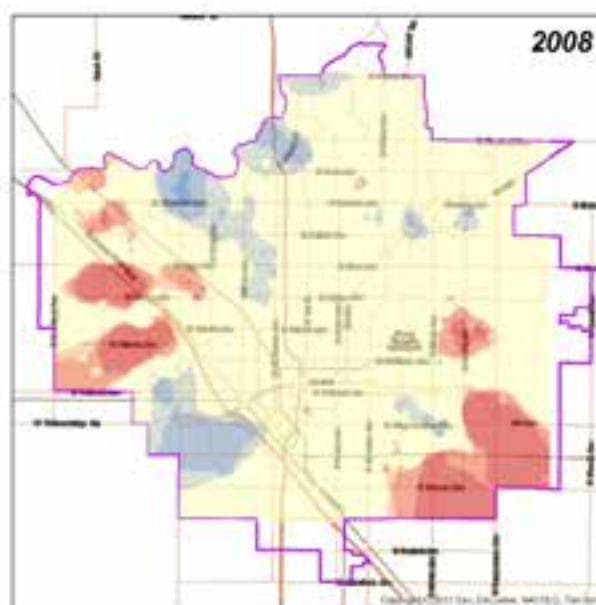


Where are the Clusters?

- The Hot Spot Analysis calculates the Getis-Ord G_i^* statistic for each location in the dataset.
- The resultant z-scores and p-values tell us where the properties with either high or low counts cluster spatially.
- To be a statistically significant hot spot, a property will have a high count itself and be surrounded by other properties with high count as well.

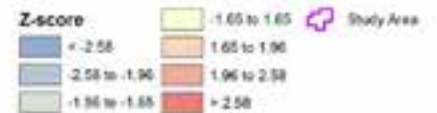
Hot Spot Analysis

- Interpretation
 - For statistically significant positive z-scores, the larger the z-score is, the more intense the clustering of high distressed property counts (hot spot).
 - For statistically significant negative z-scores, the smaller the z-score is, the more intense the clustering of low distressed property counts (cold spot).

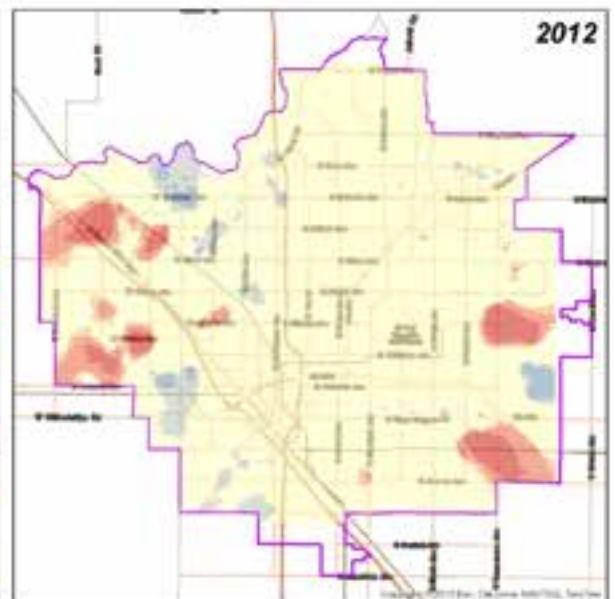
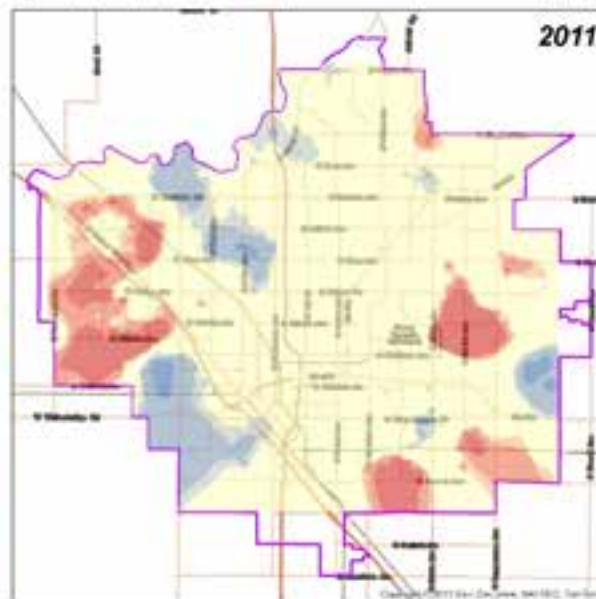
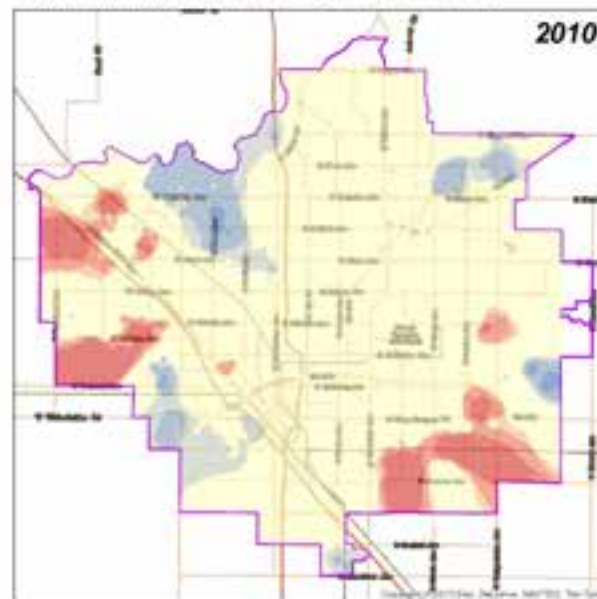


Hot Spots Analysis: Fresno-Clovis Area Distressed Sales 2007-2012

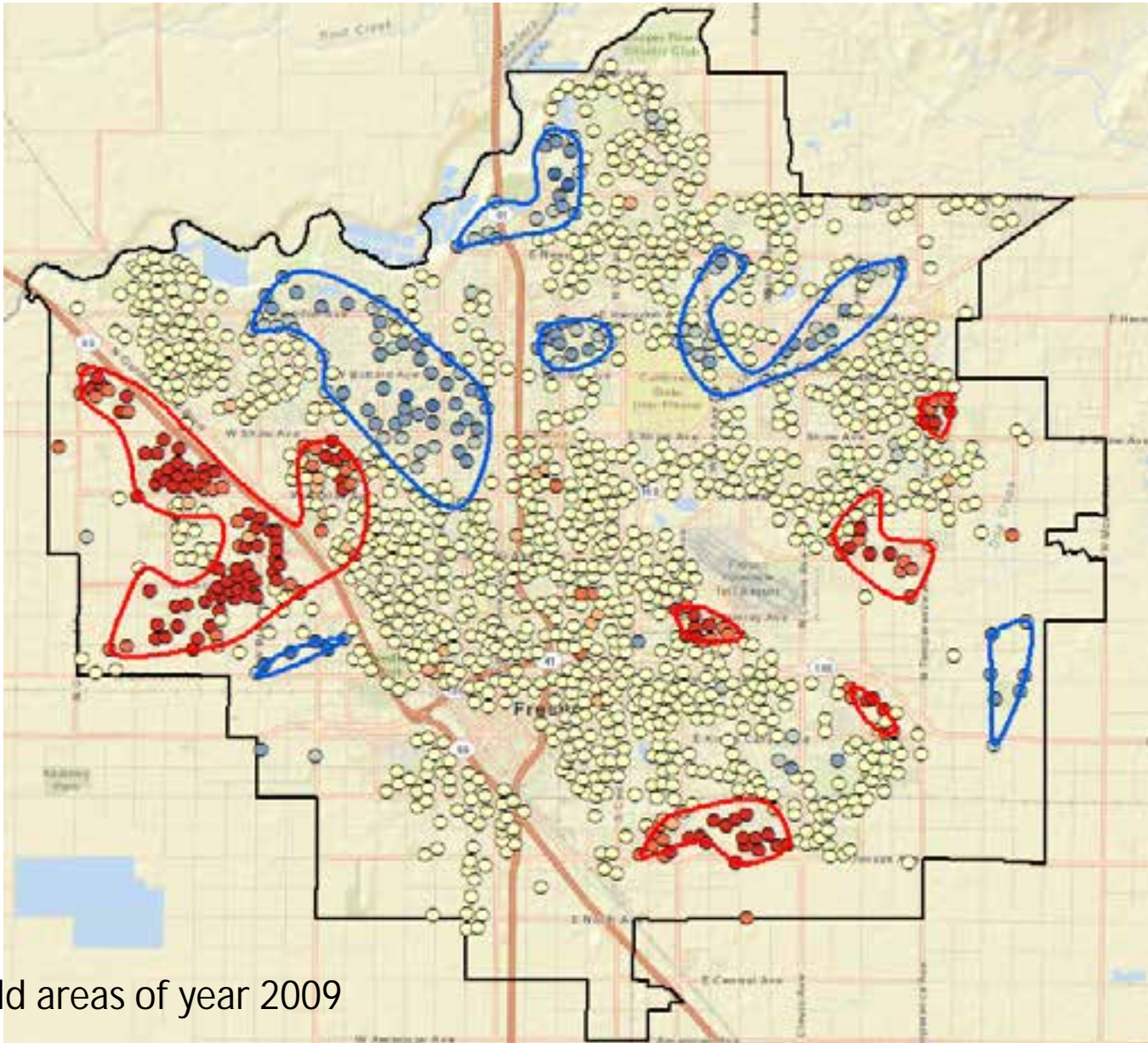
Legend



Map created by GIC and Gazarian Real Estate Center at Fresno State, 2013

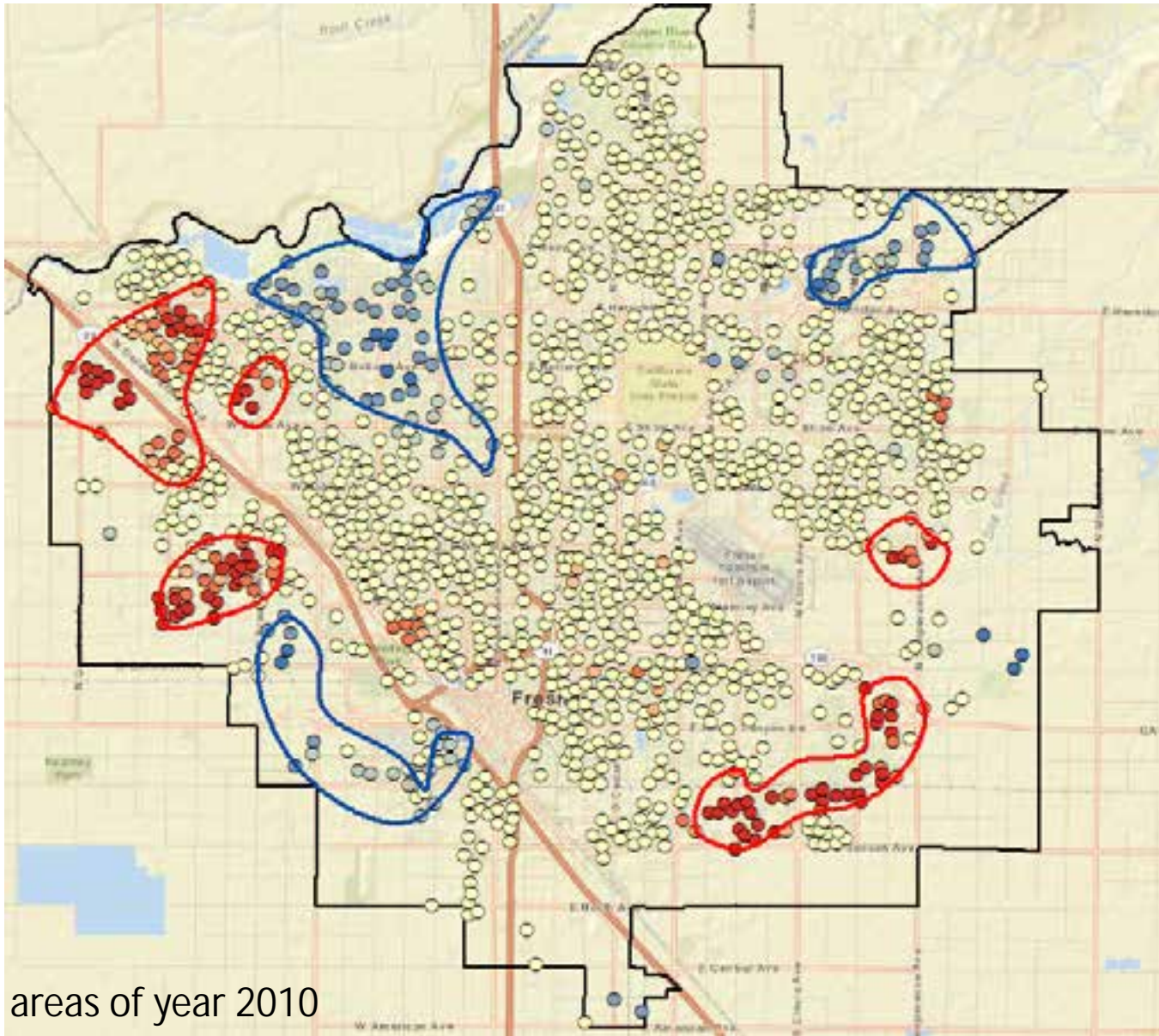


So What?



Hot and cold areas of year 2009

So What?

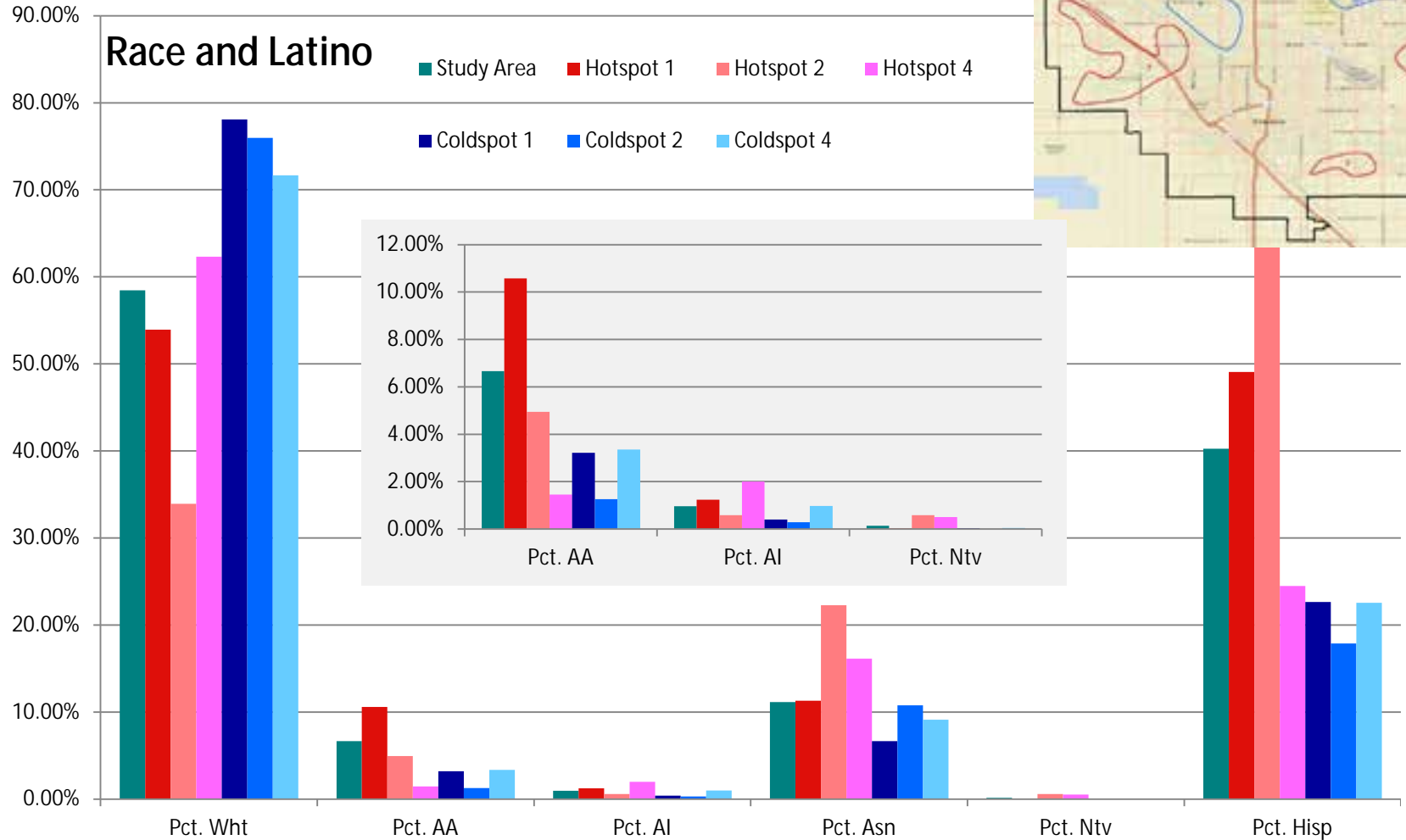


Hot and cold areas of year 2010

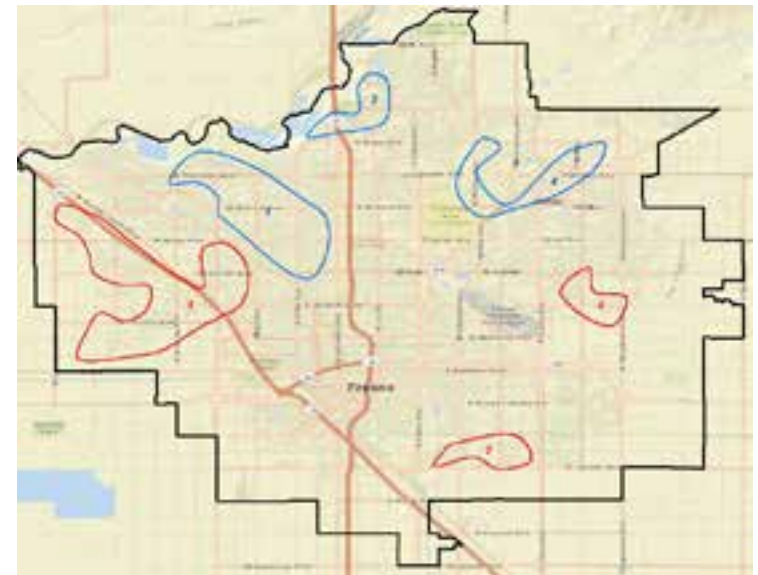
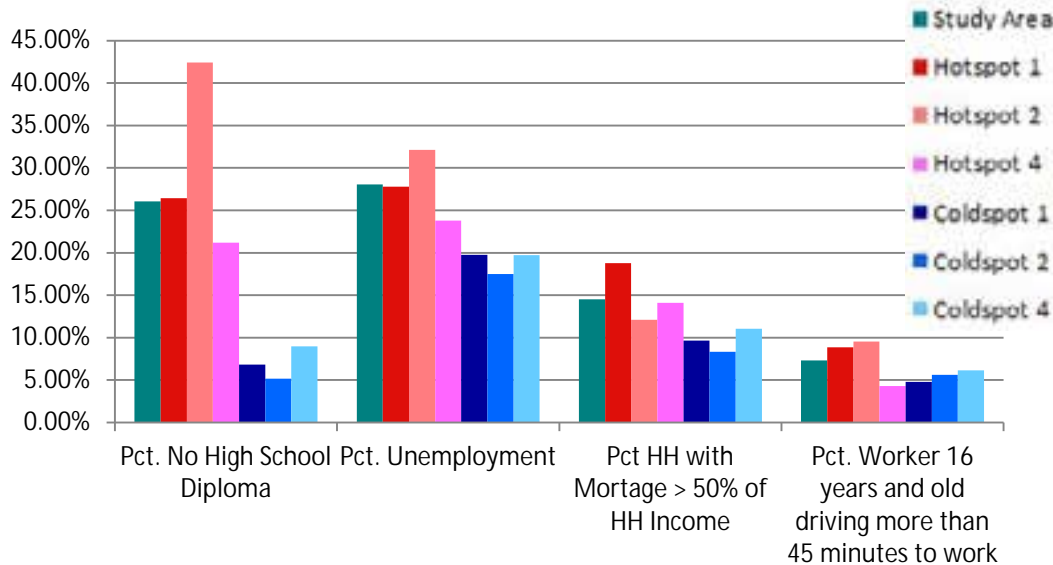
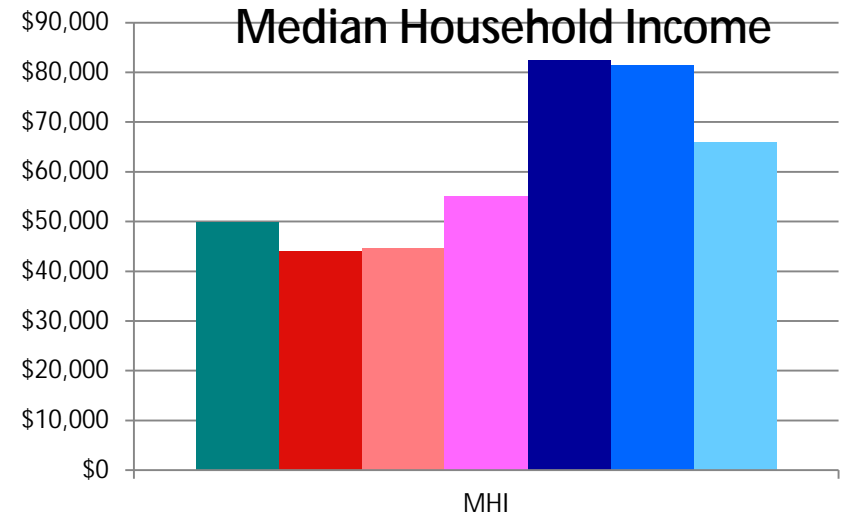
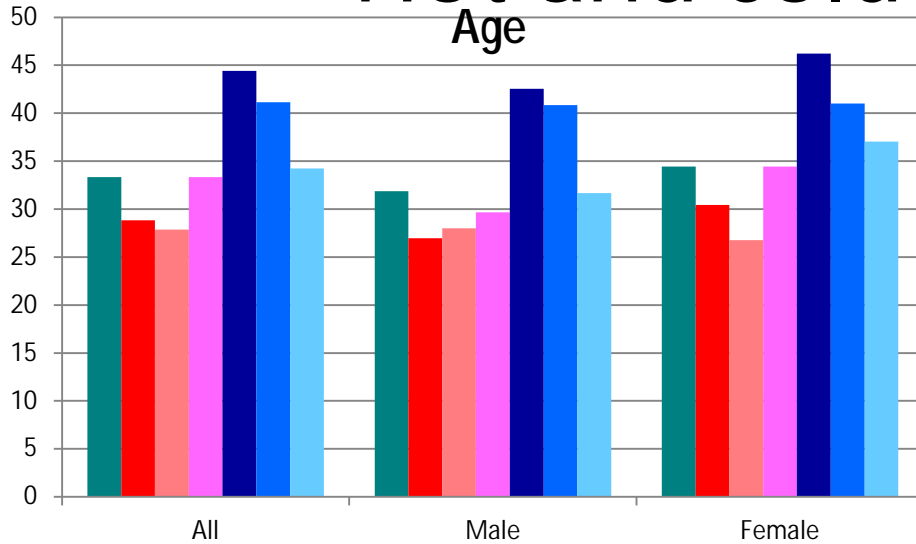
Demographics and Social-Economic Profile

- Population
 - Race
 - Non-Latino vs. Latino
 - Age
- Social-economic
 - Median household income
 - Education
 - Employment
 - Mortgage payment
 - Driving time to work

Demographics of Hot and Cold Areas - 2009



Other social-economic statistics of the Hot and cold areas - 2009



Summary

- Compare hotspots (high count) and cold spots (low count) areas
 - Hotspots tend to have lower % of white population and higher % of African American, Asian, and Latino populations.
 - The median age in the hotspots are about 8-year younger than the median age in the cold spots.
 - MHI is significantly lower in the hotspots compare to the cold spots.
 - % population 25 or older without a high school diploma and unemployment rate are much higher in the hotspots compare to the cold spots.
 - In general, the percent households in the hotspots spend more than 50% of their income on their mortgage are higher than the cold spots area.
 - % population driving more that 45 minute to work seems higher than % population in cold spots.

Questions??????