

# Property Value Impacts of Proximity to the Cabot-Koppers Superfund Site in Gainesville, FL

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## BACKGROUND AND INTRODUCTION

### Cabot-Koppers Superfund Site:

- Cabot Carbon – charcoal production
- Koppers – creosote treatment
- Stephen Foster neighborhood adjacent to the site
- Context: delayed impacts consistent with exposure to hazardous substances

### Overall Question:

Has resilience developed in the Stephen Foster (SF) neighborhood?

- Resilience is a process over time

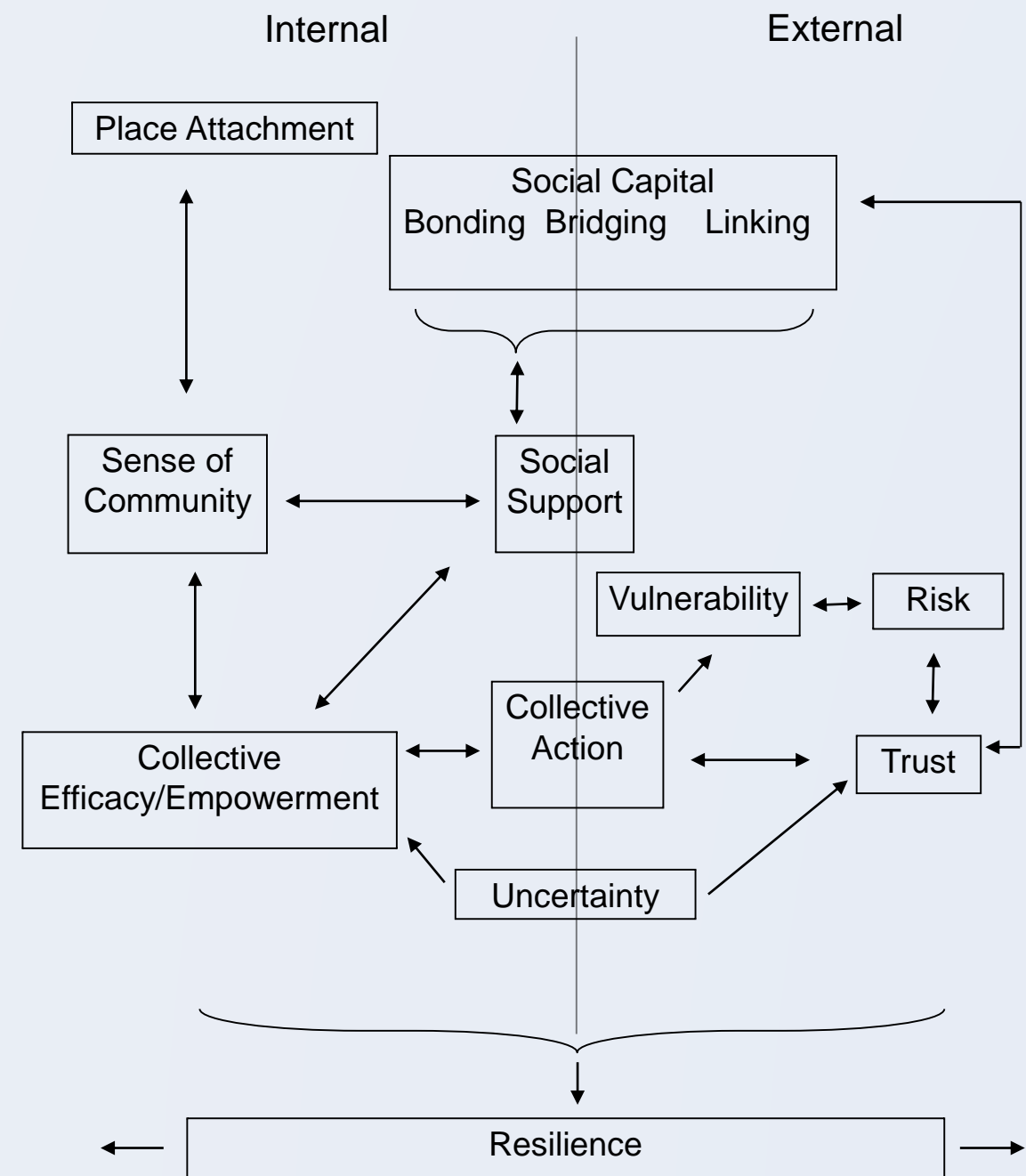


Figure 1. Model of Stephen Foster neighborhood community social processes showing resilience construct linkages

### Study Objective:

- Economic impact assessment of proximity to site
  - Property values used as indicators of risk
  - Neighborhood characteristics

## METHODS

- Census tract 3 – SF neighborhood
- Census tract 10 - comparison group neighborhood based on homogeneity of:
  - Location (NW Gainesville)
  - Median household income
  - Owner occupied units
  - Renter occupied units
- Dataset – 2000-2018 property values from FL Department of Revenue
- Sample – differences between:
  1. 2000-2005: events surrounding discovery of contamination from site in Floridan aquifer
  2. 2006-2011: litigations - cleanup scope and process
- Economic impact indicators:
  - Property values
  - Square footage
  - Homestead exemption
  - Year built
  - Sale year
  - Sale price

### Locations of Census tracts 3 and 10, the Stephen Foster neighborhood and the Cabot-Koppers Site in Gainesville, FL

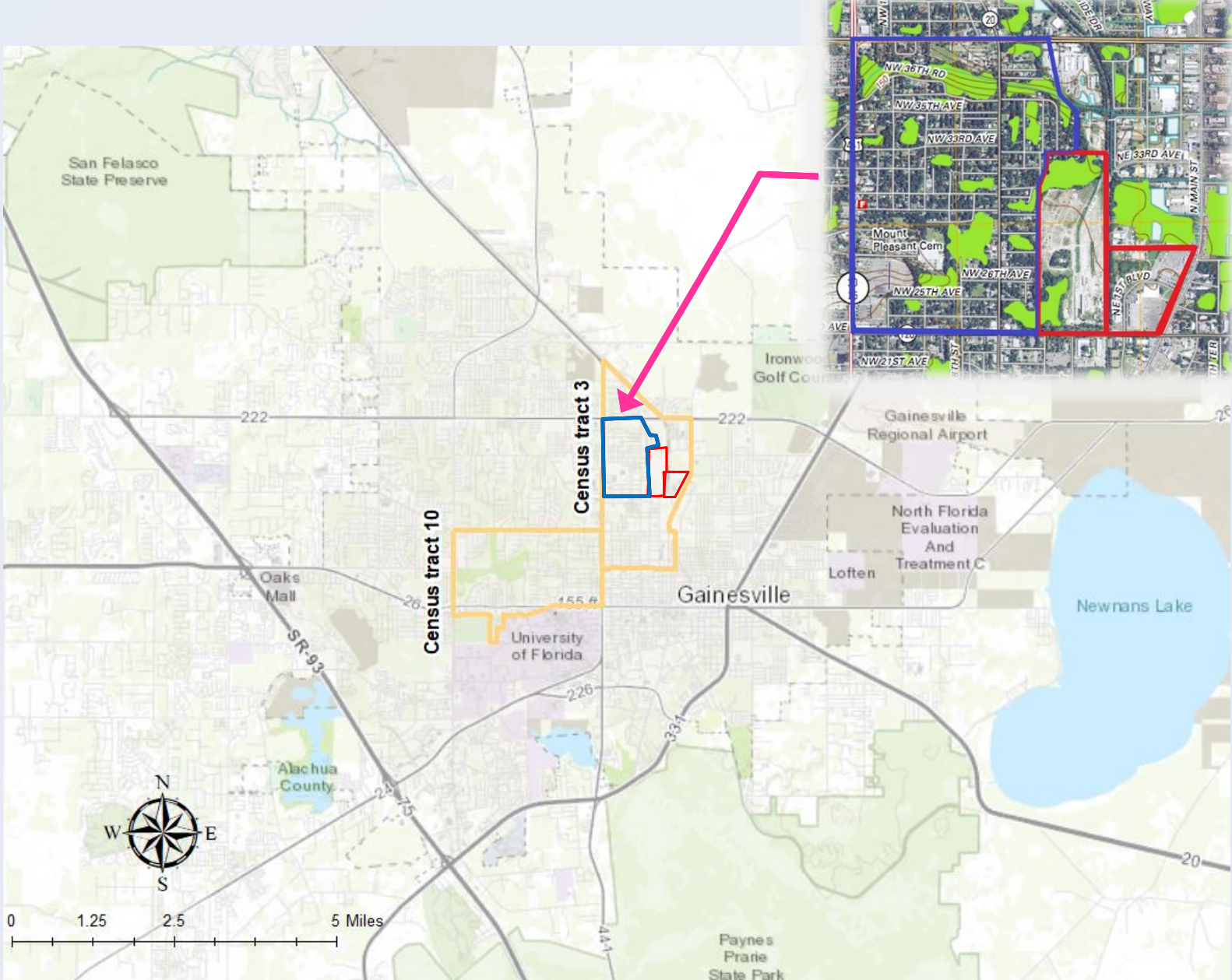


Figure 2. The yellow polygons represent the boundaries of Census tracts 3 and 10 in Gainesville, FL. Within Census tract 3, the larger blue polygon (left) represents the boundaries of the Stephen Foster neighborhood. The adjacent red polygons (right) represent the Cabot-Koppers site within Census tract 3.

### 2018-2000 Property Value Difference by Parcel in Census tracts 3 and 10 in Gainesville, FL

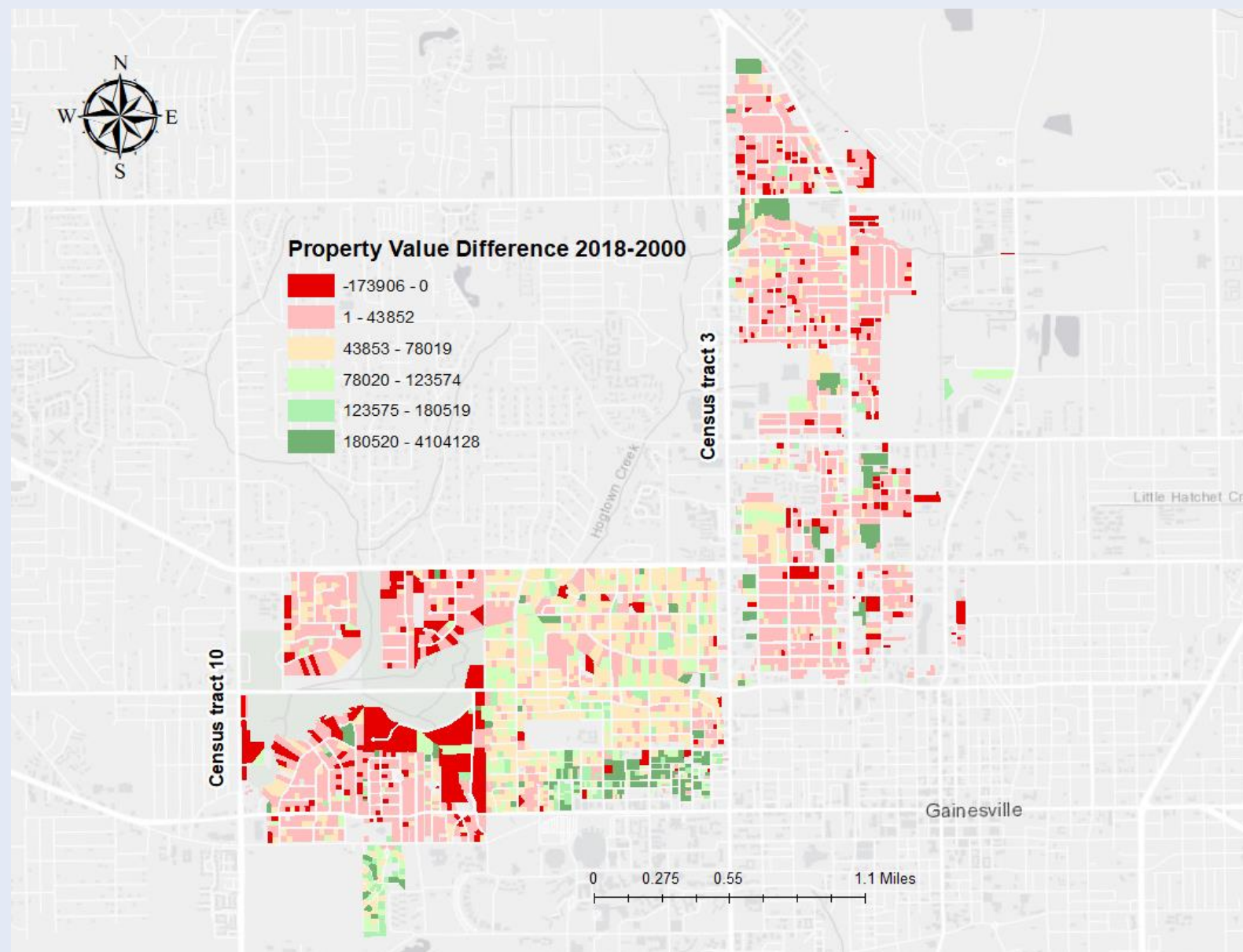


Figure 3. Property values in both Census tracts were adjusted for inflation. The 2000 values, after being transformed to 2018 dollars, were subtracted from the 2018 values and mapped.

## RESULTS

Table 1, Descriptive Statistics and Paired Sample t-test Results in Census tracts 3 and 10 for Differences in Property Values Between 2005-2000 and 2011-2006

Census tract			n	95% CI for Mean Difference	t	df
3	2005-2000	30979.92 (41053.89)	1698	29025.83, 32934	31.1*	1697
	2011-2006	8821.65 (229575.17)	2360	-445.36, 18088.67	1.87	2359
10	2005-2000	66456.21 (95885.65)	1934	62180.13, 70732.28	30.48*	1933
	2011-2006	-14581.44 (155600.26)	2107	-21229.21, -7933.68	-4.3*	2106

Note. \* p < .001. Standard Deviations appear in parentheses below means.

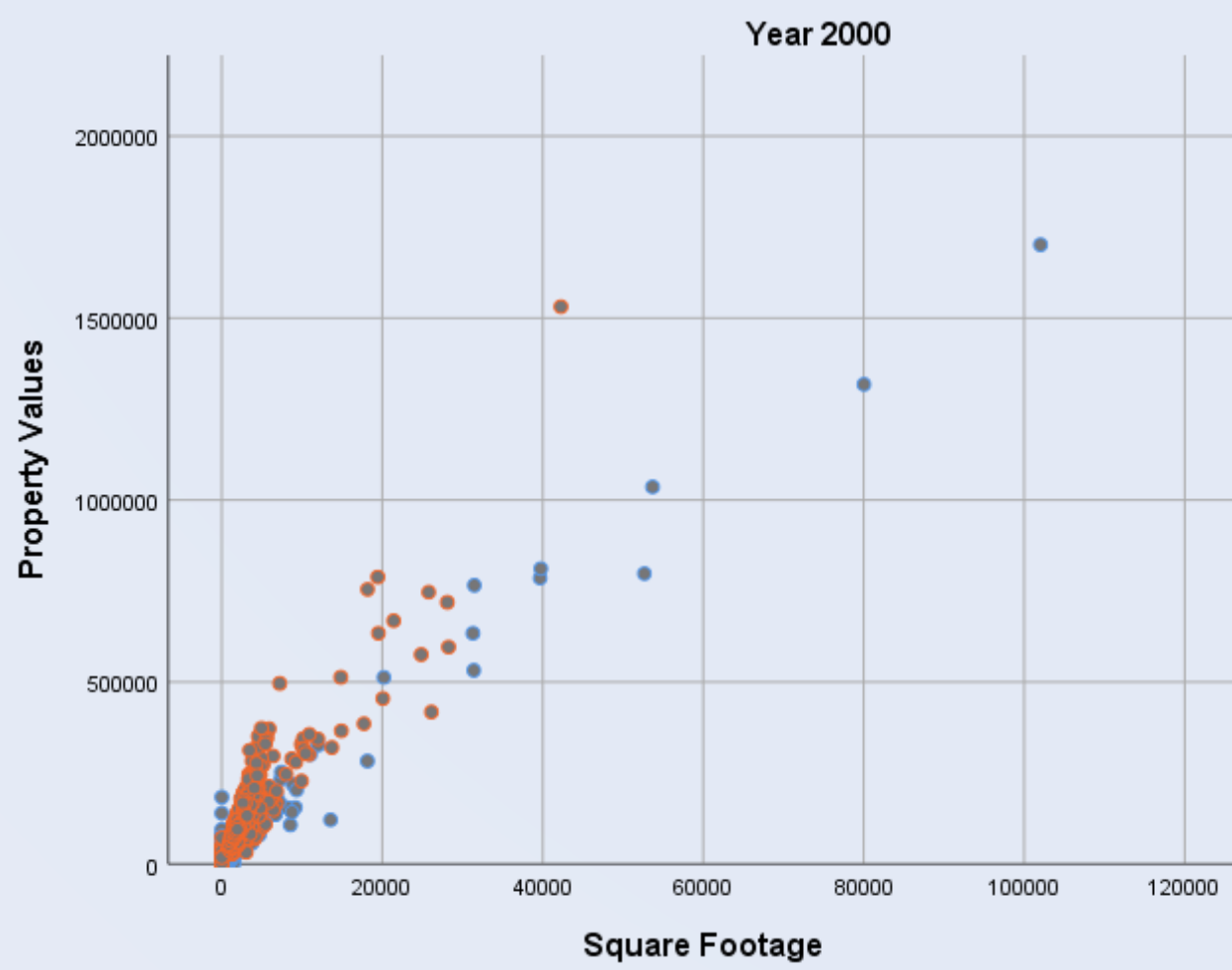


Figure 4. The scatter plot above shows the differences between census tracts among the relationship between property values and square footage for the year 2000. Census tract 3 is shown in blue and census tract 10 is shown in orange.

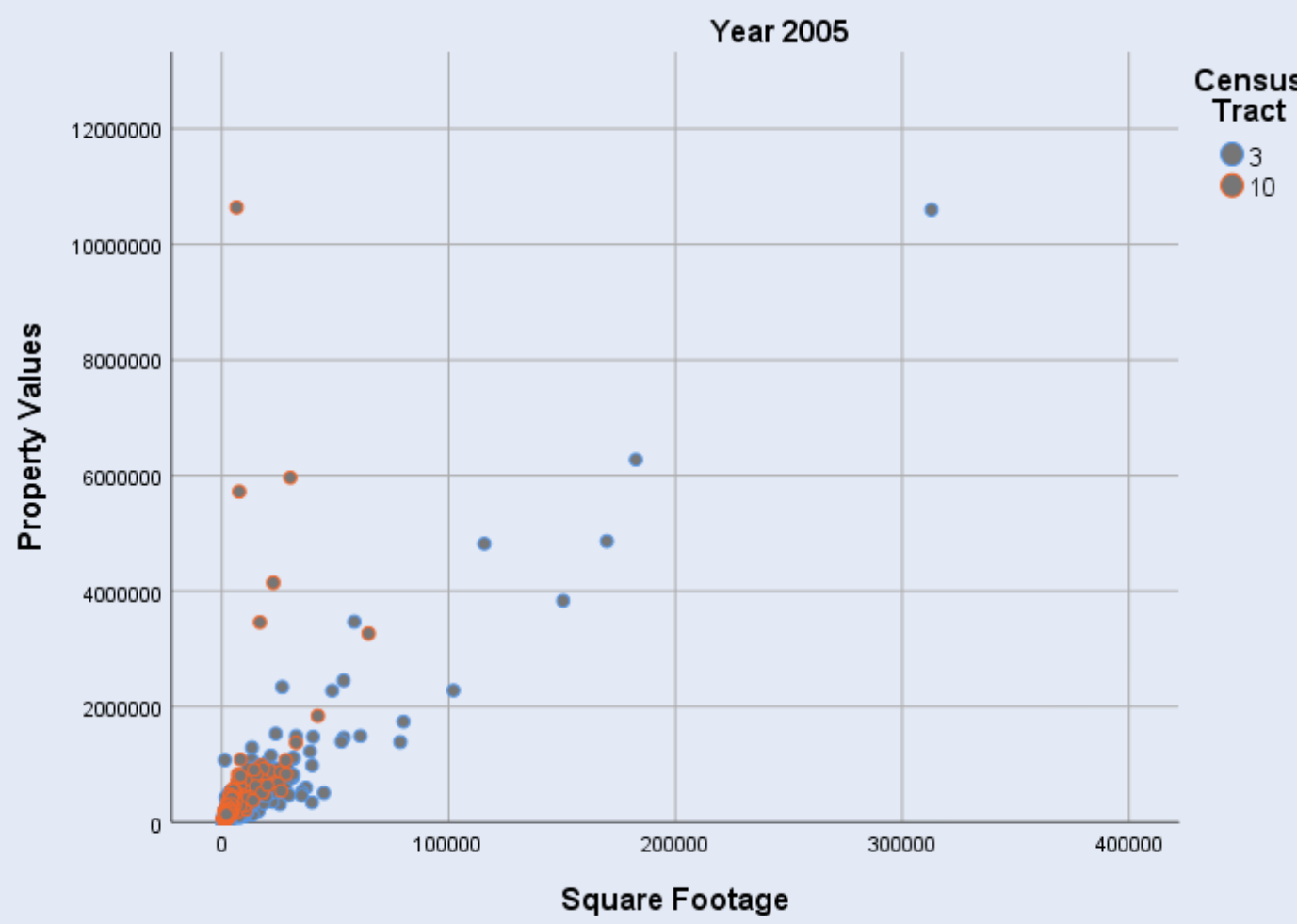


Figure 5. The scatter plot above shows the differences between census tracts among the relationship between property values and square footage for the year 2005. Census tract 3 is shown in blue and census tract 10 is shown in orange.

Table 2, Logistic Regression Analysis of Alachua County Property Values in 2000

Independent variable	b	se	z ratio	Prob.	Odds
Homestead	4.798	.976	24.178	.000	121.240
Census Tract	8.484	1.425	35.466	.000	4835.667
Effective Year Built	.092	.015	35.519	.000	1.096
Square Footage	.003	.000	118.518	.000	1.003
Sale Year	.000	.000	.012	.912	1.000
Sale Price	.000	.000	5.212	.022	1.000

Model  $\chi^2$  = 852.944 p. < .001  
Pseudo R<sup>2</sup> = .788  
n = 3633

Note: The dependent variable in this analysis is property values in Alachua county census tracts 3 and 10 in the year 2000 coded so that 0 = the majority of the values and 1 = the extreme values.

Source: Data from Florida Department of Revenue.

### Timeline of Watershed Events: Cabot-Koppers Site

2000-2011



Figure 6. Timeline of watershed events in the cleanup process of the Cabot-Koppers Superfund site, 2000-2011.

## CONCLUSIONS AND DISCUSSION

### Conclusions:

- Strongest correlations between value and square footage
- Where you live matters: differences between census tracts
  - Values in census tract 10 generally higher than census tract 3
  - Biggest differences 2005-2000
  - Census tract 10 experienced more property value impacts than census tract 3
  - The impacts were not more profound for the SF neighborhood in both time periods
  - Properties going up the most in value potentially went down the most in value
- Potential economic downturn protective factors for SF neighborhood:
  - Tainted reputation of the SF neighborhood
  - Property values lower in general in census tract 3

### Limitations:

- Not all variables of interest are available dating back to 1983
- Economic downturn confounds property value impacts resulting from watershed events in cleanup process
- Active mortgage data not available
  - Higher value mortgages in census tract 10 leading to more vulnerability to economic downturn potentially

### Future Research:

- More demographic variables included
- Data dating back to site listing in 1983 included
- More regression analyses disaggregated by census tract to see differences
- Additional impacts resulting from future development of site
- Floodplain data
- Mediating and moderating relationships
- Time series analysis
- Establish common set of community resilience indicators