Building Permit Patterns as Gentrification Indicator in East Austin, 1990-2005: A GIS Analysis

Sunshine Mathon
School of Architecture

December 15, 2006
Introduction to GIS (CRP386: Fall 2006)
EXECUTIVE SUMMARY

The defining of East Austin as the “Negro district” in the 1928 Austin city plan set the stage for East Austin to develop as a predominantly poor African-American region of the city. The influx of large numbers of poor Mexican-American residents in East Austin further exacerbated the divide between Caucasians and people of color, between affluence and poverty.

In the last decade, the overall increase in real estate values throughout Austin’s core in conjunction with East Austin’s proximity to both downtown and the University of Texas at Austin has resulted in increasing gentrification pressures for the long-time residents.

By compiling and analyzing two specific residential building permits, new residential single-family house permits and residential remodel permits, issued by the city of Austin, this paper considers an alternative measure of the gentrification process in East Austin. Analyzing permit values at three-year intervals, I hoped to reveal trends that could be used to predict and/or prevent gentrification in other areas.

Although no definitive indicators or patterns were discovered, the analysis suggests refined avenues for further research that may produce more telling results, such as the transition of low-cost clustered developments to geographically dispersed developments in the years immediately preceding a gentrification building boom.
INTRODUCTION

A history of identity: East Austin

Systemic racism has been a facet of Austin’s history since it was founded. By the end of the nineteenth century, as in the vast majority of the United States, segregation between the African-American and Euro-American populaces was clear and pervasive. Even though the African-American population in Austin seems to have been reasonably well organized, as evidenced by a two-month streetcar boycott protesting the introduction of separate streetcar compartments in 1906, racism and segregation maintained a powerful grip on Austin’s character (Humphrey, 2006.)

Like the poorer districts in many cities, communities of color in Austin have been zoned, manipulated and coerced into the least desirable urban areas. In the landmark 1928 city plan, the Austin city government further codified segregation by defining an undesirable region of Austin, specifically East Austin, as the “Negro district.” Although the city could not forcibly relocate African-American residents from other parts of the city, the withholding of municipal services (schools, sewers, parks, etc.) from African-American residents outside of East Austin acted as a strong-arm tactic to “force” relocation (Chusid, 2006.)

As in many segregated and ill-served African-American communities throughout the United States, in the face of systemic neglect and mistrust, the African-American community in East Austin developed networks of relationships germinating a vibrant self-sufficiency. By 1950, the African-American population increased from 3,500 to almost 15,000. The communities within East Austin had founded more than 30 churches, two colleges and approximately 150 small businesses (Humphrey, 2006.)

During this same period, between 1900-1950, the Mexican-American population also increased dramatically. Although the growing Mexican-American community did not experience the same unyielding systemic racism that the African-American community did, they nonetheless established themselves in East Austin, primarily south of East Eleventh Street.
In the 1960s, urban renewal, the infamous urban demolition that took place in most cities around the country, encroached on the communities of color in East Austin. Though the aegis of urban renewal was to remove the “blighted” conditions of urban centers, the end result was most often a destruction of old neighborhoods dominated by communities of color. Areas deemed to be blighted by poverty and unhealthy conditions were razed leaving open land for outside development. In Austin, the urban renewal facilitated a major expansion of the University of Texas campus including most of the University’s stadiums as well as the Lyndon B. Johnson School of Public Affairs (Norton, 2006.) Eventually, the city’s residents sued the City of Austin and successfully halted further demolition.

Earlier in this same period, the city of Austin in conjunction with the State of Texas Department of Transportation finished the downtown section of IH-35, a transnational highway that bisected East Austin from the downtown and wealthier regions of the city. In May of 1962, when IH-35 was inaugurated, the new highway became a powerful physical demarcation between the two halves of the city, reflecting the other divisions that had existed for decades (Interstate 35 through Austin, 2001.)

Although the United States Civil Rights Act of 1964 outlawed Jim Crow laws, it was not until the early 1970s that African-American and Mexican-American residents began to have a formal voice in local politics. By 1975, both populations had won their first seats on the Austin School Board and Austin City Council.

A change in identity: the last decade

Austin’s population has grown dramatically in the last decade and a half. Though much of this growth has occurred in suburban developments outside of the inner core of Austin, a subsequent rise in property value of the inner core has paralleled Austin’s population growth. East Austin’s proximity to the University as well as to the downtown center has become more relevant as real estate pressures have priced out students, Caucasian middle-class families and the many artists and musicians that have made Austin famous in recent years from living close to the city’s heart. A Historic Preservation professor at the University of Texas at Austin, Jeffrey Chusid, describes the transformation of Austin’s housing market.
“In just 30 years, Austin has gone from the city with the best housing affordability index in the country to the most expensive housing market in Texas, and one of the most expensive of any large non-coastal U.S. city. East Austin neighborhoods, only a few blocks from a growing downtown and an enormous university, are increasingly seen as hip and funky – the place to go for entertainment, great food, and a cute, affordable house. Crime rates are relatively low, and gang activity is negligible, and although the schools are poor, that doesn’t seem to deter musicians, grad students, or young professionals from contemplating a move east (Chusid, 2006.)”

This conception of East Austin as an affordable haven for Austin’s hip roots began to be challenged publicly by activist groups in East Austin during the mid-1990s. In particular, the well-organized and assertive organization People in Defense of the Earth and Her Resources (PODER) disputed the popular, favorable view of East Austin’s identity. Even though the efforts at historic preservation and the creation of the city’s Smart Growth policy were intended to mitigate the dramatic turnover of properties close to downtown, PODER chronicled a steady displacement of traditional African-American and Latino communities via the influx of wealthier white residents.

In 2002, the city of Austin commissioned the Austin Department of Planning with producing maps using census data that looked at demographic changes in East Austin between 1990-2000 (see Appendix, COA Maps 1a-1c.) The maps do show a re-distribution of both the African-American and Latino populations in East Austin. However, the maps suggest that the two minority populations may be affecting each other more than the influx of Caucasian residents. Of course, these maps do not tell the entire story as economic data is missing. Further, changes since the last census are quite visible. PODER challenged the trend based on organized personal observations in the mid-1990s. East Austin today is changing much more rapidly than when PODER was first formed. No longer is the claim of gentrification challenged by other Austinites.

Since 2000, development pressures in East Austin have grown dramatically. The western regions of East Austin, those closest to downtown and the more affluent neighborhoods, have
seen a marked shift. Walking down almost any street east of IH-35 over the last few years and multiple new developments, the refurbishment of existing houses and new small businesses are nearly omnipresent. The question of the existence of gentrification in East Austin is past. The questions that now remain are how to mitigate displacement and encourage the entrenchment of existing families and businesses.

HYPOTHESIS
Numerous measures are widely cited as indices for gentrification. However, given the generally mutable, and often personal, definition of gentrification itself, no formal rubric is widely accepted as an overarching set of indicators. Nonetheless, the most commonly referenced gauges are real estate and demographic trends. Most often the real estate and/or demographic changes within a specific region are compared with historic trends in the same region or are compared to overall city trends. Typical indicators used to highlight gentrification include disproportionate eviction rates, rapid increases in housing values and rents, rapid growth in commercial property sales, increases in Caucasian occupancy patterns, displacement of minority occupants, increasing income levels and increasing educational attainment levels (Alejandrino, 2000.)

This paper considers a specific alternative data set rarely used in analyzing the trends of gentrification: building permit patterns. This query is not intended to replace other established indicators, but instead, is intended to consider whether building permit patterns can be utilized as a tool to foresee gentrification and, perhaps, provide another route by which it can be mitigated.

I have chosen to scrutinize two specific building permit types related to previously mentioned real estate trends: 1) new residential single family house permits, and 2)

---

1 Though gentrification is a widely recognized phenomenon, the definition of gentrification is surprisingly inconsistent. Further the definitions are often polarizing statements defending one perspective or another. Comparing four dictionaries, the two consistent elements between all definitions are: 1) the displacement of a region’s occupants by new wealthier residents; 2) the physical renovation of existing buildings and infrastructure.
residential remodel permits. Within each of these data sets, this paper considers whether emergent patterns can be distinguished over time relating to the following measures:

- the quantity of permits;
- the value of permits (both specific values and mean average values);
- the geographic distribution of permits.

**METHODOLGY**

Initially, I intended to study a set of gentrification indicators different from what this paper now considers. My goal was to look at patterns of basic municipal services, such as sidewalk repair, streetlight density, power outages, etc., to see if any changes in services directly followed, or perhaps even preempted, gentrification. I was unable to acquire the necessary data so the focus of the paper shifted.

The city of Austin provides a wide set of publicly available GIS data. The standard data that most cities provide, such as building footprints, water supply systems and bus routes, are available via a web link off of the Austin City Connection website (City of Austin GIS Data Sets.) However, none of the standard data provides any useful measures of gentrification. However, the city of Austin also hosts a publicly available ftp site that contains more relevant data (Index of ftp://coageoid01.ci.austin.tx.us.) One of the datasets I discovered was a complete aggregation of building permits issued by the city of Austin from 1990-2006. Given the scope of the project and the focus on gentrification the building permit data represented a singularly sufficiently rich dataset for this paper.

The building permit dataset includes a wide range of recorded data for each issued permit including assessed value, address, square footage of project, permit type, associated census block group, and issue date. The dataset also included information that had little relevance to this paper such as Austin Smart Growth category and detailed descriptions of permits. The dataset was so rich, in fact, that I had to carefully consider which data to consider for this paper and which to leave unaddressed.
In the end, I chose to focus my analysis specifically on two permit types: 1) new residential single family home permits, and 2) residential remodel permits. I chose these two permit types because they both seemed the most immediately related to the trends of gentrification. Having chosen these two permit types, I performed the following steps to conduct my analysis.

• Divided building permit dataset into individual sets based on year of permit issue.
• Symbolized only the two permit types chosen (new residential single family home and residential remodel.)
• In order to pull out overall trends and retain sufficient data detail, I chose to investigate data at three-year intervals beginning in 1990 and ending in 2005.
• Excluded 2006 permits because data did not include the entire year’s permits.
• Classified each dataset manually into four categories to show trends in affordability.
• Normalized all permit values to account for inflation using the 2005 Consumer Price Index (CPI) as the baseline. The exception was the 1990 dataset. For irresolvable technical reasons, the dataset would not allow me to add a new column to include the CPI. Although unfortunate, I do not believe CPI normalization would have affected the map to any great extent.
• Mapped individual permit locations and values.
• Mapped the mean average of permits within each census block group.

Finally, all data was clipped to a region bounded by IH-35 on the west, US 183 on the north, Ed Bluestein Blvd on the east and Town Lake on the south. Though the municipal boundaries extend further east, this area represents the bulk of East Austin. The city-sponsored Gentrification Task Force proposed a valuation trend study area that included a smaller area bounded by Airport Blvd on the east and Manor Road on the north (see Appendix, COA Map 2.) However, this boundary exclusively looks at the region most immediately threatened by gentrification. I chose to include areas further east to compare a region that will likely be under higher development pressure in the next decade.
FINDINGS

New residential single-family house permits

The following series of maps illustrate the trends in new residential single-family house permits in East Austin between 1990-2005 at three-year intervals. Each map includes two measures of the residential single-family permits for that year.

First, each permit is identified as a point with an associated value. Second, each census block group polygon is shaded to represent the average mean value of all permits within its bounds. Though the value classifications are the same for both point and polygon data, different color schemes are chosen to facilitate readability.

Building Permit Patterns as Gentrification Indicator in East Austin, 1990-2005

Sunshine Mathon

CRP386: Fall 2006
Building Permit Patterns as Gentrification Indicator in East Austin, 1990-2005

Sunshine Mathon
CRP386: Fall 2006
Residential remodel permits
The following series of maps illustrate the trends in residential remodel permits in East Austin between 1996-2005 at three-year intervals. Each map includes two measures of the residential remodel permits for that year. The permit data collected by the city until 1994 did not include remodel permits. Therefore these maps include only those with collected data.

Each permit is identified as a point with an associated value. Each census block group polygon is then shaded to represent the average mean value of all permits within its bounds. As in the previous maps, though the value classifications are the same for both point and polygon data, different color schemes are chosen to facilitate readability.

Building Permit Patterns as Gentrification Indicator in East Austin, 1990-2005

Sunshine Mathon

CRP386: Fall 2006

19

Author: Sunshine Mathon
Sources: U.S. Census Bureau and City of Austin
ANALYSIS

For both datasets, new residential single family house permits and residential remodel permits, three primary measures were considered when looking for development patterns: the quantity of permits, the value of permits (both specific values and average mean values), and the geographic distribution of permits. The analysis will be organized accordingly.

New residential single-family house permits

Quantity

One of the initial surprises during the analysis was small number of new residential single-family house permits in 1990. In the entirety of East Austin, less than 10 permits were issued. Compared with years to come, more permits would be issued in a single block group than in all of East Austin.

![Graph 1: Number of issued permits by year (res_sf.)](image)

Nonetheless, between 1990-2005, the trend is very clear on the whole (see Graph 1.) Every year the number of permits increased. Between 1999-2002 and again between 2002-2005, however, the increases show dramatic acceleration. Where the general trend between 1990-1999 could be described as gradual, sometime between 1999-2002 the trend changed
Value

It is important to acknowledge at the outset that any map that classifies demographic data runs the risk of misrepresenting the data through the choice of classification method. In other words, the maps I created for this paper could look quite altered if I had classified the data differently. Nevertheless, I believe the classification scheme I chose does provide insight into trends of affordability and gentrification. The manually chosen breaking points between value classes reflect the both the range of values detailed in the dataset as well as critical points of affordability for the existing residents of East Austin.

In general, permit value trends demonstrate the same pattern evidenced by the analysis of the quantity of permits. Between 1990-2005, even adjusted for CPI, permit values increased as a whole.\(^2\) For the most part, the median and mean averages permit values parallel the other’s trend (see Graph 2.) In 2005, however, the much lower median average value suggests a preponderance of lower value permits with a few much higher value permits at the top. The high number of individual permits in highest value class supports this conclusion.

Graph 2: Average value of issued permits by year (res_sf.)

\(^2\) As mentioned previously, the one caveat is that I was unable, for technical reason, to normalize the 1990 data using the CPI. As also mentioned, I do not believe this to be a significant issue. The resulting map changes would likely be minimal – as they were with both the 1993 and 1996 data.
More specifically, no individual permits, with two exceptions, between 1990-1996 are found in the upper two levels of classification.\(^3\) In 1999, however, a few issued permits with values above $110,000 first appear. In 2002, the number of these higher valued permits increases. In 2005, the number increases dramatically. In particular, the most recent data, from 2005, exhibits a comparatively large number of high-value permits suggesting an accelerating development of more expensive houses.

Another trend to consider is that until 2002, the majority of issued permits in each year falls into least valued classification: less than $70,000. In 2002, the number of issued permits in the other three classification values sums to a larger number for the first time. Although this fact does not hold true through 2005, the reason is that a low-cost development east of Airport Blvd was issued a large number of low-valued permits. If this development were ignored, the trend evidenced in 2002 would be continued through 2005.

**Geographic distribution**

With so few permits issued in 1990, it is difficult to draw any particular conclusions regarding geographic distribution. In the simplest terms, all permits are located in the southern half of the study area. There does not seem to be any other evidence of clustering or logic of location.

In 1993, however, one trend begins to emerge. A dense clustering of numerous permits suggests a focused development by a single developer. Although the dataset does not include the name of the entity issued the permit, the clustering of multiple similarly valued permits suggests a single developer.

The data from 1996 exhibits two more dense developments although in different locales. Further, a surprising amount of development emerges on the eastern periphery of the study

\(^3\) Both permits, one in 1990 and one in 1993, are possibly aberrant data. Their values are so high compared to other permits of the same time as to seem like clerical mistakes. If they are instead accurate, I consider them to be unique and not reflective of the overall trend.
area. Although a few isolated permits had appeared in the eastern edge in previous years, the majority of permits were found in the western half.

In 1999, the emergence of issued permits on the eastern periphery continues. Whether this is due to the greater availability of undeveloped land in this area or other reasons seems unclear. Nonetheless, the trend suggests that the focus of new development in the mid-1990s occurred east of the area considered as the most susceptible to gentrification.

The other change of note is that no clustered developments by a single developer occur from 1999-2002. Whereas a large percentage of issued permits had previously been comprised of clustered developments, the vast majority of permits from 1999 on are issued to disparate individual locations.

As we have seen previously, 2002 marks a dramatic shift in geographic distribution development trends. Related to the significant increase in the quantity of permits during this time, the majority of block groups in East Austin have at least one issued permit. In the southern half of the study area, the vast majority of block groups have at least one issued permit.

**Residential remodel permits**

As mentioned previously, the original dataset did not include residential remodel permits before 1995 so the analysis will look at from 1996-2005.

**Quantity**

The quantity of issued residential remodel permits was high from the earliest dataset. Further investigation of this measure would likely require a comprehensive statistical analysis to reveal any discernable trends.

Nonetheless, two noticeable changes occurred. Between 1996-1999 the number of issued permits surprisingly decreased. Whether this unexpected decrease is due to broader economic
trends, such as the bursting of the tech bubble, a change in local laws or some other unknown reason is uncertain (see Graph 3.)

Between 2002-2005, the opposite occurred. The number of permits jumped significantly. This fact reflects the trend seen in the analysis of new residential single-family house permits.

**Value**

Concurrent with the two transitions described above in the quantity of issued permits, each change also reflected a shift in permit values. Between 1996-1999, parallel to the decrease in the number of permits, the average value of the issued permits also decreased. Between 2002-2005, parallel to the sudden increase in the number of permits, the average value also increased (see Graph 4.)
Even though patterns are more difficult to discern in this dataset simply using the maps, a most striking change can be seen when viewing the difference between 1996 and 2005. Though the actual quantity of issued permits increases by only a small percentage, the average value of issued permits rises quite significantly. The same relationship is true for the ratio between the quantities of low value to high value permits.

**Geographic distribution**

Upon first glance, every year of data seems to show a wide geographic dispersal of permits. Though a few very basic observations can be asserted from the maps, these observations seem superficial and not particularly telling. Even more so than with the quantity of residential remodel permits, a comprehensive statistical analysis is required to distinguish any significant patterns of interest.

**CONCLUSION**

More than any other pattern or trend, the analysis of the two sets of building permit data suggests that a major transition in the nature of development occurred sometime between
1999-2002. Until this time, the pattern was one of relatively gradual increase in numbers, value and geographic dispersion. After this time, the increases accelerated dramatically. The conditions that contributed to this acceleration are difficult to discern. Whether due to a change of a broader economic condition, to a perceived critical mass of recent change in an otherwise downtrodden area, or to some other condition, the acceleration marks a turning point that is, in all likelihood, difficult to reverse.

PODER, and other East Austin activists, claim that the process of gentrification began to affect the residents of East Austin in the mid-1990s. Long-term families of color were being forced out through increases in rents and property taxes. According to the analysis in this paper, if the measures are indicative of gentrification, the trend towards gentrification in East Austin was relatively gradual until sometime after 1999 and before 2002. If both of these assertions are accurate then the pressure, and the subsequent consequences, of gentrification have increased dramatically since the turn of the century. Whether East Austin could have successfully absorbed the comparatively gradual change, as evidenced by the pre-1999 data, and retained its essential character is passed. The question now remains how to mitigate the ensuing displacement and foster the entrenchment of existing families and businesses.

The purposes of most studies of gentrification are to either establish the prevalence of gentrification and/or to evaluate the factors that contribute to gentrification so that it can be successfully curtailed. The purpose of this study is to consider indicators that may be used in predicting the emergence of intense gentrification. Though this study hints at possible indicators, such as a shift in clustered developments to more dispersed individual developments, a deeper statistical study of building permit patterns using finer grain detail would be required to draw any substantive conclusions.
APPENDIX

Data source details

Produced by: City of Austin, Department of Planning

Metadata summary
All data was projected to the Texas State Plane Central NAD83 Survey (feet) coordinate system. All analysis was performed at the census block group level.

Analysis details
1) Dissolved study area block groups to use for clipping other data to the necessary parameters. Study area defined by IH-35 on west, US 183 on north, Ed Bluestein Blvd on east and Town Lake on south.

2) Dissolved slightly larger region around study area in order to show context within the city environs.

3) Joined building permit dataset, ‘bp1990-2006,’ to census block group layer.

4) Clipped ‘bp1990-2006,’ using dissolved study area.


8) Chose three-year intervals for analysis so within each layer (‘res_sf’ and ‘res_remod’) sequentially selected 1990, 1993, 1996, 1999, 2002, 2005 and saved each as a new layer with the following nomenclature: ‘99_res_sf’ or ‘05_res_remod.’ Since the ‘res_remod’ layer only included data after 1994 so the first selected year for ‘res_remod’ was 1996.

9) Added a column to the table of each layer. Titled the new column ‘CPI’. Applied the same CPI value to all records relative to the year. All values were normalized according to the 2005 CPI.

1990: Unable to add new column. ArcMap returned error saying, “layer was being used by another application.” Unable to rectify problem.

1993: 0.74
1996: 0.81
1999: 0.85
2002: 1.92
2005: 1.0

10) Symbolized ‘value’ normalized by ‘CPI’ on each layer.

11) Classified each year layer manually using the following consistent parameters.

‘res_sf’: 4 classes (70000, 110000, 150000, 150001)
‘res_remod’: 4 classes (3000, 10000, 25000, 25001)

12) Joined data of each year layer based on spatial location and produced new layers with average mean values of permits within bounds of each block group. Saved each layer with the following nomenclature: ‘99_res_sf_avg’ or ‘05_res_remod_avg.’
Changing African-American Landscape in East Austin

Austin, Texas. 1990 Census and Census 2000 Data.
Changing Hispanic Landscape in East Austin

Austin, Texas. 1990 Census and Census 2000 Data.
COA Map 1c.

Map produced by: The City Demographer, Department of Planning, City of Austin, May 2002.
COA Map 2.

Map produced by: City of Austin Gentrification Task Force, August 2002.
References


