The Geography of Opportunity in Austin and How It Is Changing

Authors
Frank Fernandez, Executive Director, Green Doors
Matthew Martin, Research Associate, The Kirwan Institute
Hayden Shelby, Graduate Research Assistant, The Kirwan Institute
Yumi Choi, Graduate Research Assistant, The Kirwan Institute

Contributors
David Norris, Senior Researcher, The Kirwan Institute
Matt Wolstoncroft, Web Communications Specialist, The Kirwan Institute

Capital Area Council of Governments
GREEN DOORS
OHIO STATE UNIVERSITY for the Study of Race and Ethnicity
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Executive Summary</td>
</tr>
<tr>
<td>4</td>
<td>A Regional Approach to Community Planning</td>
</tr>
<tr>
<td>6</td>
<td>Change and Opportunity: Why it Matters and What it Means for the Central Texas Region</td>
</tr>
<tr>
<td>10</td>
<td>The Changing Geography of Opportunity in Austin</td>
</tr>
<tr>
<td>12</td>
<td>Austin Metro Economic and Mobility Index and Housing and Environment Opportunity</td>
</tr>
<tr>
<td>23</td>
<td>Interpreting The Change Index</td>
</tr>
<tr>
<td>28</td>
<td>Moving Forward</td>
</tr>
</tbody>
</table>

Funding for the Sustainable Communities Initiative (SCI) is made possible through a partnership program between the Department of Housing and Urban Development (HUD), the Environmental Protection Agency (EPA), and the Department of Transportation (DOT). The Kirwan Institute would also like to thank its SCI technical assistance partners, PolicyLink, and PERE for helping to assist SCI grantees across the country to incorporate social equity into their regional sustainability planning.
EXECUTIVE SUMMARY

This report and the online mapping tool associated with this work are the product of a collaborative effort between Green Doors and the Kirwan Institute for the Study of Race and Ethnicity, with the help of many Austin area community partners. The current report is a follow-up to a 2007 opportunity mapping effort. In this context, opportunity is defined as a situation or condition that places individuals in a position to be more likely to succeed or excel. We map opportunity by creating indexes of different aspects of opportunity, such as education, economic mobility, and housing, and displaying them through static and online maps. While the earlier 2007 mapping initiative focused only the current levels of opportunity, this new effort incorporates a Change Index to measure how demographics and different indicators of opportunity have shifted over the last decade. By mapping the Opportunity Index, the Change Index, and overlay indicators such as race and affordable housing, it is possible to get fine-grained and nuanced view of the dynamics of multiple aspects of opportunity in the Central Texas region.

The maps in this analysis have highlighted four broad issues in the Austin metro area:

1. The Hispanic population is primarily located in low opportunity areas. Since this is the fastest-growing segment of the population, it is imperative to improve Hispanic people’s access to opportunity—especially educational opportunity—if the region hopes to grow and maintain a productive workforce in the future.

2. Development in a few neighborhoods just east of Interstate 35 poses a threat to the African American and Hispanic populations currently living there. As wealthier inhabitants move in and home prices rise, the original residents may be forced to move to find more affordable housing. Thus, even if these areas become higher opportunity, the people who need access to that opportunity the most will not benefit.

3. Affordable housing must be expanded in higher opportunity areas. Currently the vast majority of affordable housing is located in low or very low opportunity neighborhoods, meaning the people who rely on affordable housing programs do not have access to the educational and economic resources they would need to eventually move to market-rate housing. Affordable housing is intended to be a ladder to the middle class, but it cannot work if the upper rungs of the ladder are cut off.

4. A number of Austin communities fall in the category of low opportunity and are also on the decline, according to the Change Index. Though moving people to opportunity through subsidized affordable housing in high opportunity areas must be part of the strategy for expanding opportunity, it is not sufficient. It is not enough to bring people to opportunity; the real solution is to bring opportunity to people. This can be achieved through place-based investments in low opportunity areas that seek to address the specific challenges of those communities.

The static maps in this report in concert with the interactive online maps can serve as a lens through which to analyze future policy ideas. Decision makers can use this geographic information to see how proposed programs may differentially impact certain sectors of the population. Additionally, community organizations can upload their own data to the online maps to highlight resources and mold the maps to fit their needs. Ultimately, the online maps can be as dynamic as their users. The more information and thought that is put into them, the more useful a tool they become.
This report is a follow-up to the 2007 *Geography of Opportunity: Austin Region*

Working with the non-profit housing organization, Green Doors in Austin, Texas, the Institute completed an opportunity mapping assessment of the Central Texas region. Since the completion of this work, advocates across Austin have utilized the opportunity maps to inform decisions. Recently, the City of Austin’s affordable housing development programs utilized the Institute’s opportunity maps to assess affordable housing investments in the city.

View report online: [http://kirwaninstitute.osu.edu/the-geography-of-opportunity-austin-texas/](http://kirwaninstitute.osu.edu/the-geography-of-opportunity-austin-texas/)

**Collaborating to Expand Opportunity in the Central Texas Region**

The following report and the online mapping tool associated with this work are the product of a collaborative effort between Green Doors and the Kirwan Institute for the Study of Race and Ethnicity. Further, Green Doors brought the collaboration to critical community partners, including The City of Austin, Travis County, The Housing Authorities of the City of Austin and Travis County, Capital Area Metropolitan Planning Organization (CAMPO), Community Action Network (CAN), and The Capital Area Council of Governments (CAPCOG), whose participation as a Sustainable Communities Initiative (SCI) grantee is part of the development of a regional Fair Housing and Equity Assessment that will be completed using many of the data and findings from this report. The primary purpose of this project is to bring together a multitude of stakeholders to develop a better understanding of equity and neighborhood trends in the region, and to develop steps to expand opportunity for all communities, particularly for the region’s most vulnerable populations.

**A Regional Approach to Community Planning: Overview and Purpose**

Because of the nature of job and housing markets, it is important to work together as a region to understand and plan for future housing and employment. As the economy continues to globalize and places realize the significance of competing as regions, collaborating to address regional challenges and inequities will become an essential part of building competitive advantages. Those regions that coordinate and act collectively in terms of investment and
stewardship of their economic, environmental, and human resources will be those that thrive in the 21st century.

In 2007 the Kirwan Institute partnered with Green Doors to produce the first report on opportunity in the Austin area, entitled *The Geography of Opportunity: Austin Region*. The current report is a follow-up to that work with a slightly different focus. Whereas the 2007 mapping project looked only at the current state of opportunity, this project also examines the dynamics of opportunity in the region by comparing how certain aspects of it have changed over the past several years. This change is analyzed using a number of housing and socioeconomic variables from 2000 to 2010.

The Change Index is a compilation of indicators such as housing vacancy rates, homeownership rates, median income, poverty, and race. While some of the indicators are the same, the Change Index is fundamentally different from the Opportunity Index because different levels of change cannot be easily categorized as good or bad. For example, a low opportunity tract may be represented by high development in the Change Index because it has decreasing vacancy rates, poverty rates and non-White population, while also having increasing educational attainment and median income. This combination of indicators could mean that the area is undergoing a period of revitalization; however, it also indicates that the cost of living in this area is increasing, and original residents may soon be pushed out. None of this means that the high rate of change is good or bad; it just means that local agencies may need to act to ensure that the neighborhood retains affordable housing and accessibility to other opportunities for residents.

Of course, the current mapping project also includes statistical opportunity maps similar to those done in 2007. By comparing the current state of opportunity in the region with the amounts of change indicated by the Change Index, Green Doors and its partners can get a full picture of where the city is and where it is likely headed. By knowing which parts of the city are thriving, which are struggling, and which are undergoing demographic changes, area leaders can anticipate the needs of the community and help expand access to opportunity for all people in the Austin metropolitan region.
How Opportunity is Defined in This Study

Opportunity, in the context of this project, is defined as a situation or condition that places individuals in a position to be more likely to succeed or excel. Opportunity has many dimensions, ranging from educational quality to social status to access to transportation. Because of the multi-faceted nature of opportunity, it is not enough to map a single indicator. By using an index that includes many indicators of opportunity, it is possible to identify places where many factors that can limit or expand a person's social mobility or potential are coinciding to compound positive or negative effects.

The Opportunity Index is calculated by normalizing different indicators to give each an equal weight. The result is a z-score for each indicator. A z-score of greater than zero means that the indicator is higher than the overall area mean for Austin, and a z-score of less than zero means it is lower. To get a category z-score—for educational opportunity, for example—the z-scores of all indicators in that category are averaged. The comprehensive opportunity score is an average of the category scores.

It is important to note that the Opportunity Index scores are a relative measure, and they compare neighborhoods only to other neighborhoods in the region. A low opportunity neighborhood in Austin could be considered moderate or even high opportunity in another region. Just because an area has a low z-score in the index, that does not mean the neighborhood has no assets; it just ranks low on the indicators compared to other places in the Austin metropolitan area. This is why it is important for local communities to interact with the maps and use additional layers of data to plan for people and places. Community members may be able to add valuable elements to the maps in order to highlight attributes of certain areas of the city, which can aid in development.

In addition to the comprehensive and category-specific opportunity mapping, this project also uses overlay maps to focus on the distribution of specific aspects of demographic or environmental factors throughout the metropolitan region. Examples include race, subsidized housing, and toxic facilities, among others. Using these additional overlays, we can see how features of the population or built environment coincide with high or low opportunity.

Why Opportunity Is Important for the Central Texas region

Like many regions in the South and Southwest, Austin has undergone a demographic shift in recent decades, with Hispanics now making up a large proportion of the population. From 2000 to 2010 the Hispanic population of the Austin metropolitan area grew from 26.2% to 31.4% of the
overall population. In the central city the numbers are even higher, going from 30.6% in 2000 to 35.1% in 2010. The growth of the Hispanic population is clearly illustrated in the chart below which shows the change in population proportions by race for each county in the Austin metropolitan area for both census years. As this report will show, this growing Hispanic population tends to be concentrated in low opportunity areas, both in the central city and in the suburbs. This shows a lack of equity with regard to access in the region, and that social inequity can have profound economic consequences. With a large percentage of the youth population living and growing up in low opportunity areas, it is imperative that the Central Texas region expand opportunity in order to create a healthy and educated workforce for the future. Having such skilled workers in the area is critical for central Texas in order to continue to pursue economic development and keep pace with the global economy in the years to come.
Other important demographic changes in Austin involve the migration of African Americans out of the central city and the movement of Whites in. From 2000 to 2010 the African American and White populations shrunk as a percentage of the total metropolitan population; however, they grew in absolute terms. This is because of the disproportionate growth of the Hispanic population. What is interesting is where this growth of the African American and White populations is taking place in the region. Even though Whites shrunk as a proportion of the total metropolitan population, they grew as a percentage of the central city, from 53.0% in 2000 to 54.7% in 2010. Over 20% of the White population growth in that ten year span occurred in the central city. By comparison, the African American central city population actually shrank in the same time period from 63,403 to 60,760, despite the fact that the overall metropolitan population grew by over 25,000. This means that African Americans are increasingly moving out to the suburbs while the White population is becoming more urban.

<table>
<thead>
<tr>
<th></th>
<th>Austin Metro 2000</th>
<th>Austin Metro 2010</th>
<th>Austin City 2000</th>
<th>Austin City 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>43,222</td>
<td>80,980</td>
<td>30,960</td>
<td>49,159</td>
</tr>
<tr>
<td>Black or African American</td>
<td>95,078</td>
<td>120,510</td>
<td>63,403</td>
<td>60,760</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>327,760</td>
<td>538,313</td>
<td>201,040</td>
<td>277,707</td>
</tr>
<tr>
<td>Other</td>
<td>25,544</td>
<td>13,747</td>
<td>38,012</td>
<td>17,493</td>
</tr>
<tr>
<td>White</td>
<td>758,144</td>
<td>938,474</td>
<td>347,533</td>
<td>385,271</td>
</tr>
</tbody>
</table>
This trend could mean that African Americans new to the region are wealthier and are choosing to move to more affluent suburbs. However, the maps tell us that the African American population is moving out to low-opportunity suburbs. At the same time, many central city neighborhoods with a growing White population represent high development in the Change Index, suggesting that home values are rising, resulting in original residents moving further out to find affordable housing.

This is a prime example of how these maps can be used to identify patterns in the region. While the statistics tell the general trends in the area, with maps we can see exactly where and how the changes are taking place. With this information, local leaders can act to prevent the displacement of African Americans from central city neighborhoods and make efforts to expand education, health, and economic resources to the growing Hispanic population. Access to the detailed data of the online maps allows for a more nuanced analysis of the whole region.
The Changing Geography of Opportunity in Austin

Previous Austin Opportunity Mapping Initiative

The original mapping performed in 2007 revealed a striking division of opportunity along Interstate 35. Just to the west of the interstate lay the census block groups of the highest opportunity by nearly every category, whereas the area to the east contained the majority of the low opportunity neighborhoods in the region. These areas of low opportunity contained much higher concentrations of Hispanics and African Americans. Conversely, the high opportunity areas of the western portion of the central city and near suburbs had higher concentrations of Whites. This segregation was particularly pronounced among children; two-thirds of Hispanics and African American children were living in areas of low or very low opportunity, while less than twenty percent were living in high opportunity areas, half the rate of White children. At that time, there was also scarcely any subsidized housing in high opportunity tracts, providing little chance for people of low income to avail themselves of other amenities.

Comprehensive Opportunity Map

There continues to be an East-West divide in opportunity throughout the city and metro area. As of 2010, most of the highest opportunity areas are found west of Interstate 35. The western portion of Travis County has the largest amount of very high opportunity areas. Since 2000, the areas of very high opportunity have spread to the outer suburbs in Travis, Hays, and Williamson Counties. The western central city and inner-ring suburbs remain high or very high opportunity, except for a few large block groups at the very western edge of Travis County. In contrast to 2000, there are a few neighborhoods just east of Interstate 35 that have become high or very high opportunity. A notable outlier, the Mckinney Planning Area, part of the Southeast Combined NPA, is an island of high and very high opportunity in an eastern inner ring suburb between Interstates 35 and 183 in Travis County near Mckinney Falls State Park. This area has a few large IT employers driving up high scores in the economic category, though it still ranks low in education. Areas of low opportunity are predominantly in the eastern part of the city and metropolitan area, especially in eastern Travis County and the majority of Bastrop and Lockhart Counties.

Education Index

Education opportunity generally reflects the patterns of the comprehensive opportunity map, with a few notable exceptions. The island of high opportunity in the eastern inner-ring suburb between Interstate 35 and US 183 scores very low on education. In the eastern outer suburbs that are low opportunity, the education indicators show that these areas outperform in education relative to other measures of opportunity.

The majority of high or very high educational opportunity areas are located in the western portion of both the region and the city of Austin. In the city, educational opportunity overlaps with the comprehensive opportunity level of the area. Though nearly all areas of western Travis and Hays...
Counties score high on the education index, the outer suburbs and more rural areas tend to rank slightly lower on adult educational attainment compared to those that are closer to the central city. The same holds true for the high or very high educational opportunity areas on the outer edges of Williamson County. Despite the fact that the adults in the area generally have lower levels of education than some of their urban peers, the school systems are performing well.

While the western portion of Travis County contains the bulk of the very high educational opportunity areas in the region, the eastern part of the county contains most of the very low block groups. It is notable that Travis County has very few areas of moderate educational opportunity; it is a county of extremes in this sense, and the highest areas are home to a mostly White population, while the lowest areas are inhabited by predominantly African American and Hispanic children. Map 2A illustrates the geographic relationship between children by race and educational opportunity.
Map 1: Austin Metro Opportunity Index

Description: This map represents opportunity environments in the region. The opportunity index is based on Education data, Economics and Mobility data, and Housing and Environment data. Together the data illustrate areas in the region that afford more or less opportunity for residents to lead successful lives.
Map 2: Austin Metro Education Index

Description: This map represents educational opportunity in the region. The index is based on adult educational attainment, student poverty, student/teacher ratio, reading and math proficiency, graduation rate, and school enrollment rate. Together the data illustrate areas in the region that afford more or less educational opportunity.

Educational Opportunity

- Very High
- High
- Moderate
- Low
- Very Low

Sources: American Community Survey 2006-2010, NCES 2009-2010, TEA 2011
Map 2a: Austin Metro Education Index and Youth

Description: This map represents educational opportunity in the region. The index is based on adult educational attainment, student poverty, student/teacher ratio, reading and math proficiency, graduation rate, and school enrollment rate. Together the data illustrate areas in the region that afford more or less educational opportunity.

1 dot = 200 Youth by Race
- Asian Youth
- African American Youth
- Hispanic or Latino Youth
- White Youth
- Other Youth

Educational Opportunity
- Very High
- High
- Moderate
- Low
- Very Low

Sources: American Community Survey 2006-2010, NCES 2009-2010, TEA 2011
The Geography of Opportunity in Austin and How It Is Changing

Austin Metro Economic and Mobility Index and Housing and Environment Opportunity

Housing and environment opportunity levels are nearly the inverse of economic and mobility opportunity in some parts of the region. This is because areas of high economic and mobility tend to be urban areas with high transit access, lower commute times, and more jobs. However, these same areas, being close to the urban core, also have higher home values, higher crime rates, and greater proximity to brownfield and toxic sites. The areas of central Austin that are low on economic and mobility opportunity are so because, despite having good transit access and relative proximity to jobs, they have very low median household incomes and very high unemployment rates. The majority of the outermost parts of the region score significantly higher on the Housing and Environment Index than they do on the Economic and Mobility Index because they have lower crime and vacancy rates and are farther from environmental hazards. On the other hand, they may also lack transit access and proximity to jobs.
Map 3: Austin Metro Economic & Mobility Index

Description: This map represents economic and transportation opportunity in the region. The index is based on unemployment rate, proximity to jobs, mean commute time, transit access, and median household income. Together the data illustrate areas in the region that afford more or less economic and mobility opportunity.

Economic & Mobility Opportunity

Very High
High
Moderate
Low
Very Low

Sources: American Community Survey 2006-2010, County Business Patterns 2009, Capital Metro, CARTS, and TxSU 2012

The Changing Geography of Opportunity in Austin
Map 4: Austin Metro Housing and Environment Index

Description: This map represents housing and environment opportunity in the region. The index is based on poverty, vacancy, proximity to parks, toxic sites and brownfields, crime, food access, health care facility access, home ownership, and median home value. Together the data illustrate areas in the region that afford more or less housing and environmental opportunity.
Opportunity and Race

The Central Texas region, and particularly the City of Austin, shows racial segregation along opportunity lines. While the bulk of the White and Asian populations live in high opportunity areas in the western portion of the city and inner suburbs, the majority of the Hispanic and African American populations inhabit the lower opportunity areas of the region.

Geographically, the White population dominates the western portion of Travis County and the outer edges of the entire region. The African American population, on the other hand, is highly concentrated in the eastern portion of the central city. The Hispanic population exists mostly in the eastern half of the region, with high concentrations along Interstate 35 and pockets of high density in Lockhart, Taylor, San Marcos, Kyle, and Leander. The following charts and maps illustrate the geographic relationship between population by race and comprehensive opportunity.
Map 5: Austin Metro Opportunity and Asians

Description: This map represents opportunity environments and the Asian population in the region. The opportunity index is based on Education data, Economics and Mobility data, and Housing and Environment data. Together the data illustrate the geographic relationship between regional opportunity and the Asian population.

Sources: American Community Survey 2006-2010, NCES, TEA, Community Business Patterns, Capital Metro CARTS, TxSU, ESRI Business Analyst, EPA, Tetrad Inc. PCensus, USDA
Map 6: Austin Metro Opportunity and African Americans

Description: This map represents opportunity environments and African Americans in the region. The opportunity index is based on Education data, Economics and Mobility data, and Housing and Environment data. Together the data illustrate the geographic relationship between regional opportunity and the African American population.
Map 7: Austin Metro Opportunity and Hispanics or Latinos

Description: This map represents opportunity environments and Hispanics or Latinos in the region. The index is based on Education data, Economics and Mobility data, and Housing and Environment data. Together the data illustrate the geographic relationship between regional opportunity and the Hispanic or Latino population.

Sources: American Community Survey 2006-2010, NCES, TEA, Community Business Patterns, Capital Metro, CARTS, TxSU, ESRI Business Analyst, EPA, Tetrad Inc. PCensus, USDA
Map 8: Austin Metro Opportunity and Whites

Description: This map represents opportunity environments and the White population in the region. The opportunity index is based on Education data, Economics and Mobility data, and Housing and Environment data. Together the data illustrate the geographic relationship between regional opportunity and the White population.

Sources: American Community Survey 2006-2010, NCEA, TEA, Community Business Patterns, Capital Metro CARTS, TASU, ESRI Business Analyst, EPA, Tetrads Inc. PCensus, USDA

White Population
- 24 - 900
- 901 - 1800
- 1801 - 3600
- 3601 - 7728

Comprehensive Opportunity Index
- Very Low
- Low
- Moderate
- High
- Very High
Opportunity and Affordable Housing

There are 23,437 units of subsidized affordable housing in the Central Texas region. The vast majority of these units (79%) are located in low or very low opportunity areas. By contrast, only 8% are located in high or very high opportunity areas. The largest source of funding for affordable housing in the region is the Low-Income Housing Tax Credit (LIHTC) program, which funds 11,225 units. Of these units, 85% are located in low or very low opportunity neighborhoods. HATC properties have the largest proportion located in moderate to very high opportunity areas; however, they also make up the smallest number of units, at just 325. The type with the next highest proportion located in moderate or high areas is Section 8 vouchers, demonstrating that when given a choice of location, residents choose to locate in higher opportunity areas, if possible. However, the total percentage of Section 8 vouchers used in low opportunity areas still outnumbers those in high opportunity areas by a factor of over nine to one, signifying a need for more locations accepting vouchers in high opportunity areas.
Map 9: Austin Metro Opportunity and Subsidized Housing

Description: This map illustrates opportunity and subsidized housing in the region. The map shows affordable and subsidized HACA, HATC, HUD locations relative to regional opportunity.

Sources: American Community Survey 2006-2010, NCES, TEA, Community Business Patterns, Capital Metro CARTS, TXSU, ESRI Business Analyst, EPA, Tetrad Inc., PCensus, USDA, HUD, HACA, HATC
Map 10: Austin Metro Opportunity and Subsidized Housing by Type

Description: This map illustrates opportunity and subsidized housing in the region. The map shows affordable and subsidized AHFC, HACA, HATC, HUD locations relative to regional opportunity.

Subsidized Housing Sites by Type
- HATC
- HACA
- HUD (other)
- AHFC
- LIHTC
- Section 8

Opportunity Index
- Very High
- High
- Moderate
- Low
- Very Low

Sources: American Community Survey 2006-2010, NCES, TEA, Community Business Patterns, Capital Metro CARTS, TexSIS, ESRI Business Analyst, EPA, Tetrad Inc, PCLens, USDA, HUD, HACA, HATC, AHFC
Interpreting the Change Index

The Change Index, illustrated in the following maps, shows how Census block groups have changed over the past ten years. To calculate the index, the 2000 values of nine indicators such as housing vacancy, poverty rates, educational attainment, and non-White population are subtracted from the 2010 values to find the difference. This difference is then normalized to find a z-score for each indicator, just as is done with the standard opportunity indices. Indicators that are positively correlated with development are multiplied by +1, and those negatively associated with development are multiplied by -1. A positive z-score means the indicator falls above the average of the region, and a negative score means it falls below the average.

It is important to note that, unlike in the Opportunity Index, a positive measure on the Change Index does not necessarily indicate positive change for a neighborhood. It is simply a tool to describe what may be happening in a given neighborhood. The following map shows the results of the Change Index.
Map 11: Austin Metro Neighborhood Change Index

Description: This map represents relative neighborhood change between 2000-2010 in the region. The change indicators include vacancy, owner occupancy, median home value, median rent, housing units, poverty, racial composition, median household income, and college attainment.
Since the Change Index measures levels of change instead of nominal values of indicators, it is important to also look at where an area is starting in terms of opportunity. In the following map, the Change Index is overlaid on a comprehensive opportunity map. Positive change z-scores are symbolized with large green dots; negative change z-scores are shown with large red dots, and those in the middle are represented by yellow. Using the Opportunity Index as a base layer allows for better understanding of what the Change Index means in each particular area. Though a green dot indicates that there are, on average, increasing incomes, increasing property values, increasing education, decreasing poverty, and decreasing non-white population, that green dot may mean something completely different in the western portion of Travis County than it does in the low opportunity neighborhoods to the east of Interstate 35.

In an already high opportunity area, a green dot likely means that the area is, on average, becoming even more exclusive, with increasing property values and levels of educational attainment while the minority population remains constant or decreases. On the other hand, green dots located in the low opportunity areas just east of Interstate 35 and adjacent to high opportunity areas suggest that the area may be gentrifying, with property values, incomes, and education levels going from very low to moderate and populations moving from dominantly African American and Hispanic to more mixed. On the other hand, a red dot in a very high opportunity could mean a variety of things. It might indicate that the area is becoming more diverse and affordable for a variety of different residents, but it could also indicate that the area is in economic decline due to job losses and declining incomes. At the other end of the spectrum, a red dot in an already low opportunity area likely indicates further economic decline and increasing racial segregation.

It is important to note that the use of race in the Change Index is not meant to imply that the concentration of race in and of itself is indicative of decline. Rather, we include it because it is one of many factors that are generally related to multiple aspects of neighborhood change. For example, one of the hallmarks of gentrification is the displacement of minority (usually African American) populations with a new “gentry” of White urban settlers (Sanchez-Geraci, 2009). With regard to neighborhood decline, racial segregation and its relationship to concentrated poverty in urban areas have been well documented for decades (Wilson 1987) (Massey 1993). Both the 2007 and current opportunity mapping initiatives show that this holds true in the Austin metro area. So while changes in the populations of different races cannot be categorized as good or bad, race still plays an important role in the discussion of neighborhood change and opportunity, and that is why it has been included in the Change Index.
Map 12: Austin Opportunity and Change

Description: This map provides a snapshot of existing community opportunity, as well as an overlay of neighborhood trends from 2000 to 2010. The opportunity dataset is based on indicators of Education, Economics & Mobility, and Housing & Environment. The change index compares features such as housing vacancy and median home value across the decade.

What the results of the Change Index show

On a regional level, most of the tracts rating higher on the Change Index are located west of Interstate 35 or further out in the suburbs and rural areas of the eastern and northern parts of the region.

Within the central city there is an obvious east-west divide between areas scoring high on the Change Index and those scoring low, just as there is with the Opportunity Index. What is interesting is that placement of the divide is shifted slightly east in the Change Index. As noted earlier, a few tracts just east of Interstate 35 changed from low to high opportunity between the initial 2007 mapping and the current mapping. These tracts also score high on the Change Index, indicating that there has been gentrification occurring in the neighborhoods over the past decade. Additionally, tracts just to the east of those that are high opportunity and score high on the Change Index generally also have green dots, despite being low opportunity. This indicates that these areas are also on the path of gentrification. However, just east of these tracts are neighborhoods of low opportunity that also score low on the Change Index, which may suggest that some of the poorer residents of the more western neighborhoods surrounding Interstate 35 are gradually moving further out as wealthier residents move into the gentrifying areas.

The Change Index and race

Appendices maps 13-16 show Asian, African American, Hispanic, and White populations overlaid on the Change Index. These maps demonstrate, first and foremost, that Whites are primarily located in areas of development. Hispanics and African Americans, on the other hand, are largely located in areas of decline. A notable exception, however, is the cluster of neighborhoods directly to the east of Interstate 35. While these areas have decreasing non-White populations, they still have large African American populations, suggesting that many residents have been displaced by increasing home values.

Putting it together: What are these maps telling us, and how can we use them?

There are many ways in which these maps can be used to share information and inform future policy decisions. First, the online maps provide a forum for community members to share resources and collaborate. Users can upload new data layers to the map to call attention to demographic changes and the locations of community assets, such as schools, service locations, and initiatives or events.

Second, the Opportunity and Change Index maps can help policy makers to identify challenges for the region. To start, the maps in this analysis have highlighted four broad issues in the Austin metro area:

1. The Hispanic population is primarily located in low opportunity areas. Since this is the fastest-growing segment of the population, it is imperative to improve Hispanic people’s access to opportunity—especially educational opportunity—if the region hopes to grow and maintain a productive workforce in the future.

2. Development in a few neighborhoods just east of Interstate 35 poses a threat to the African American and Hispanic populations currently living there. As wealthier inhabitants move in and home prices rise, the original residents may be forced to move to find more affordable housing. Thus, even if these areas become higher opportunity, the people who need access to that opportunity the most will not benefit.

3. Affordable housing must be expanded in higher opportunity areas. Currently the vast majority of affordable housing is located in low or very low opportunity neighborhoods, meaning the people who rely on affordable housing programs do not have access to the educational and economic resources they would need to eventually move to market-rate housing. Affordable housing is intended to be a ladder to the middle class, but it cannot work if the upper rungs of the ladder are cut off.

4. A number of Austin communities fall in the category of low opportunity and are also on the decline, according to the Change Index. Though moving people to opportunity through subsidized affordable housing in high opportunity areas must be part of the strategy for expanding opportunity, it is not sufficient. It is not enough to bring people to opportunity; the real solution is to bring opportunity to people. This can be achieved through place-based investments in low opportunity areas that seek to address the specific challenges of those communities.
Beyond these general findings for the region, it is important to consider more specific strategies for individual areas. Neighborhoods are microcosms of complex regional ecosystems, with housing, transportation, employment, and social factors interacting to form the dynamics of opportunity. Each individual neighborhood must maintain its own balance of all of those factors, as well as connect with the wider region.

The individual needs of different communities across the region may require many different approaches to expanding opportunity for residents. The following typologies are based on the opportunity and trend analysis in the report and outline the variety of approaches needed to increase opportunity access in neighborhoods throughout the region.

The broader goal of *The Geography of Opportunity in Austin and How It Is Changing* is to serve as a catalyst for action. Maps, even rich, nuanced maps that spatially describe the dynamics of opportunity, mean little if they are not used. Central Texans need to come together to help translate this data into action. The opportunity maps tell a very compelling story about the stark geographic and racial opportunity divide that exists in the region. This growing divide threatens Central Texas’ economic and social vitality. This report needs to be a community call to action — a call to all members of the community who care about the opportunity divide to come together and advocate for an “opportunity agenda” that begins to address the more pernicious effects of this divide. This opportunity agenda needs to enable community development practitioners, businesses, and policy makers to offer products and services and to create policies that increase socio-economic equity for all Central Texans, especially the most vulnerable.
These neighborhoods already have high investment and rich opportunity. Creating housing mobility options in these neighborhoods should be part of the larger strategy to expand opportunity, as well as making critical transit connections into these areas from other parts of the region. Identifying ways to connect residents within and outside the neighborhood to the growing opportunity systems should also be important considerations.

In these neighborhoods, examining specific indicators within the opportunity and Change Indexes can help point to the causes of the trend. It may be that the area is simply becoming more diverse and affordable, but it could also be that the area is beginning to decline. Looking specifically within the housing or economic indexes, for example, may reveal that a large employer has moved or that the area has been hit hard by foreclosures. Housing mobility options might be discouraged in neighborhoods like these so that new residents in pursuit of opportunity are not left stranded in a declining area. Identifying what is and is not working in these areas and finding the root causes of struggle early on can stem a downward spiral that would be much harder to reverse in the future.

In these neighborhoods, strategies should largely be based around preserving housing affordability as market rates rise. Lease-to-own for qualified income groups and maintaining a stock of affordable rental housing through various subsidy programs are examples of how this goal can be achieved. As opportunity structures develop in these areas, efforts should be made to ensure that low income residents are able to connect to these opportunities in their effort to mobilize out of poverty.

Strategic investments should mark the approach in these neighborhoods. Adding affordable housing should be done only after careful, calculated considerations about potential impact on other systems like education, transportation, workforce, environment, and public safety. Improving transit connections to other areas and providing mobility options for some residents are two other potential recommendations, but a collaborative approach should be developed to improving critical opportunity structures in these neighborhoods, such as education, employment assistance, and affordable childcare. Investments in these neighborhoods cannot happen in isolation, but must be coordinated with other strategic investments if they are to be successful.
For any neighborhood or the region as a whole, these maps can serve as a lens through which to analyze future policy ideas. Decision makers can use this geographic information to see how proposed programs may differentially impact certain sectors of the population. For example, if new transit lines are proposed, where will those lines be located relative to those who need transportation access most? Are they connecting populations who lack economic opportunity to major job centers? Or suppose funds are available to build a new school. Can this school be located in a place where it will allow for a student population from a variety of backgrounds and opportunity areas?

The above suggestions are only some of the ways that these maps can be used to facilitate collaboration and inform decision making in the Central Texas region. Ultimately, the online maps can be as dynamic as their users. The more information and thought that is put in to them, the more useful a tool they become.
I. Education Indicators

1.1 Adult Education Attainment


Crowder, K., & South, S. J. (2011). Spatial and temporal dimensions of neighborhood effects on high school graduation. Social Science Research, 40(1), 87-106

1.2 Student Poverty Rates


Helen Epstein, “Enough to make you sick?,” The New York Times Magazine (10/12/03)); (Youth and violence: A report of the Surgeon General (January 2001)


1.3 Student Teacher Ratio


1.4-1.5 Reading and Math Proficiency


1.6 Graduation and Enrollment Rates


II. Economic Indicators

2.1 Unemployment Rate


2.2 Job Access


2.3 Mean Commute Time


2.2 Employment Competition (ratio of jobs to labor force within a certain miles)


2.3 Transportation Cost


Bullard, D, Robert., Addressing urban transportation equity in the United States, 31FORDHAM URBAN LAW JOURNAL 1183 (October 2004)


2.4 Transit Access


Bullard, D, Robert., Addressing urban transportation equity in the United States, 31FORDHAM URBAN LAW JOURNAL 1183 (October 2004)

2.5 Median Household Income


2.4 Job Growth Trends


2.5 Population on Public Assistance

George Galster and Sean P. Killen, “The geography of metropolitan opportunity: A reconnaissance and conceptual framework” Housing Policy Debate


III. Housing and Environment Indicators

3.1 Poverty Rates


M. A. Turner and D. Acevedo-Garcia, Why housing mobility? The research evidence today, 14 POVERTY & RACE RESEARCH ACTION COUNCIL NEWSLETTER (January/February 2005)

3.2 Vacancy Rate

Millennial Housing Commission. MEETING OUR NATION’S HOUSING CHALLENGES (2002). Page 11

3.3 Proximity to Parks

3.4-3.5 Proximity to Toxic Waste and Brownfields

3.6 Crime Rate
Youth and violence: A report of the Surgeon General (January 2001)


3.7 Food Deserts


3.8 Health Care Facility Access

3.9 Home Ownership

3.10 Median Home Value


Squires, G. (2007). Demobilization of the individualistic bias: Housing market discrimination as a contributor to labor market and economic inequality. The ANNALS of the American Academy of Political and Social Science, 609(1), 200-214


IV. Change Index Indicators

4.1 -4.9 Change Index Indicators


Map 13: Austin Metro Neighborhood Change and Asians

Description: This map represents relative neighborhood change between 2000-2010 in the region, along with population distribution of Asians.

Sources: Census 2000-2010, American Community Survey 2006-2010

Asian population
- 1 - 100
- 101 - 300
- 301 - 900
- 901 - 1807

Neighborhood Change Index
- High Development
- Some Development
- Steady
- Some Decline
- High Decline

Neighborhood Change Variables: 2000 - 2010
- Vacancy
- Median Gross Rent
- Non-White Population
- Owner-Occupancy
- Total Housing Units
- Median Household Income
- Median Home Value
- Poverty Rate
- College Completion Rate
Map 14: Austin Metro Neighborhood Change and African Americans

Description: This map represents relative neighborhood change between 2000-2010 in the region, along with population distribution of African Americans.

Sources: Census 2000-2010, American Community Survey 2006-2010

Vacancy
Owner-Occupancy
Median Home Value
Median Gross Rent
Total Housing Units
Poverty Rate
Median Household Income
Non-White Population
College Completion Rate

Neighborhood Change Index
- High Development
- Some Development
- Steady
- Some Decline
- High Decline

African American population
- 0 - 100
- 101 - 250
- 251 - 750
- 751 - 1496

Neighborhood Change Variables: 2000 - 2010
Map 15: Austin Metro Neighborhood Change and Hispanics or Latinos

Description: This map represents relative neighborhood change between 2000-2010 in the region, along with population distribution of Hispanics or Latinos. Sources: Census 2000-2010, American Community Survey 2006-2010

Hispanic or Latino population
- 10 - 500
- 501 - 1000
- 1001 - 1500
- 1501 - 4365

Neighborhood Change Index
- High Development
- Some Development
- Steady
- Some Decline
- High Decline

Neighborhood Change Variables: 2000 - 2010
- Vacancy
- Median Gross Rent
- Non-White Population
- Owner-Occupancy
- Total Housing Units
- Median Household Income
- Median Home Value
- Poverty Rate
- College Completion Rate
Map 16: Austin Metro Neighborhood Change and Whites

Description: This map represents relative neighborhood change between 2000-2010 in the region, along with population distribution of Whites.

Sources: Census 2000-2010, American Community Survey 2006-2010

Map 16 contains a detailed analysis of neighborhood change in the Austin metropolitan area from 2000 to 2010, highlighting the distribution of Whites across different neighborhoods.

The map is color-coded to indicate various levels of neighborhood change:
- **High Decline** (red): 24-900
- **Some Decline** (orange): 901-1800
- **Steady** (yellow): 1801-3600
- **Some Development** (green): 3601-7728
- **High Development** (light green): 900-1800

Additionally, the map is overlaid with data points for:
- Vacancy
- Owner-Occupancy
- Median Gross Rent
- Median Home Value
- Poverty Rate
- Non-White Population
- Median Household Income
- College Completion Rate

The map uses a scale to indicate distances in miles, with a range from 0 to 3 miles.

Key areas marked on the map include:
- Austin
- Williamson
- Round Rock
- Georgetown
- Jollyville
- Cedar Park
- Wells Branch
- Pflugerville
- Brushy Creek

The map is a valuable resource for understanding demographic shifts and neighborhood changes in the Austin area over the decade.
*Notes and Supportive Information for Opportunity Indicators*

The following notes and source information pertain to the indicators utilized in the opportunity index. Discussion of the relationship between each indicator and high or low opportunity is included in the body of the report.

**Indicators of Educational Opportunity:**

Note: All data pertaining to school quality was collected and analyzed for elementary schools only, the larger number of elementary schools (and smaller catchment areas) enabled a more precise geographic analysis of opportunity than high schools or middle schools which have larger catchment areas.

**Adult Educational Attainment**

Description: This data represents the percentage of people who are 25 years old or above with a college degree at least in 2006. This indicator is used to identify the adult educational level of each census block group. The higher educational level is correlated to the more earnings and better social networks that lead to the better jobs. The higher value for this indicator has a **positive** effect on opportunity.

Description: The percentage of adults age 25+ with a college degree

Field Code: ED1

Data Source: American Community Survey

Geography: Census Block Group 10’

Date: 2006-2010

Methodology: Sum up a total number of people (+25 years old) with a college degree or higher than divide it by total people age 25 or older.

**Student Poverty Rates**

Description: This data represents the percentage of students qualified as economically disadvantaged in 2009-2010. This is the most common indicator traditionally used to identify student poverty. School quality and the economic status of its student body have been shown to have a significant relationship to student performance. The higher poverty schools have been proven to negatively impact student performance, regardless of the individual student’s economic status. Also, teachers in higher poverty schools must spend more time to address the additional needs of high-poverty students and as a result have less time to focus on teaching course work. Lower test scores, coupled with other indicators of low socioeconomic status, provide fewer opportunities for higher education and eventually, fewer job opportunities. The higher value for this indicator has a **negative** effect on opportunity.

Definition: The percentage of students receiving free or reduced price lunch

Field Code: ED2

Data Source: National Center for Education Statistics (NCES)

Geography: Point-based, School locations

Date: 2009-2010 school year

Methodology: Each block group was assigned the student poverty rate of the three elementary schools nearest the block group centroid. This process also considered school district boundaries, so as to assign data to block group only according to the district in which the block group resides.

**Student/teacher ratio**

Description: This data represents the average number of students assigned to each teacher for each school. This
indicator reflects teacher workload and the availability of teachers’ services to their students. Lower values for this indicator suggest better service to students. Thus, a higher value for this indicator has a **negative** effect on opportunity.

**Definition:** The ratio of students to teachers for the three nearest in-district schools

**Field Code:** ED3

**Data Source:** National Center for Education Statistics (NCES)

**Geography:** Point-based, School locations

**Date:** 2009-2010 school year

**Methodology:** Each block group was assigned the student-teacher ratio of the three elementary schools nearest the block group centroid. This process also considered school district boundaries, so as to assign data to block group only according to the district in which the block group resides.

**Reading Proficiency**

**Description:** This data represents the proportion of 4th graders proficient in Reading. The percentage of students meeting or exceeding the state standards is used as an indicator of school performance. Although test scores are not perfect tools to measure student proficiency and may be discriminatory, given the central role that they play in determining advancement and the opportunities available to students, and the importance of scores in the federal No Child Left Behind legislation, they must be acknowledged as important measures. A higher percentage would mean better quality education and greater opportunity for these students to pursue higher education. Thus, a higher value for this indicator has a **positive** effect on opportunity.

**Definition:** School reading proficiency rates of three nearest in-district primary schools

**Field Code:** ED4

**Data Source:** Texas Education Agency

**Geography:** Point-based, School locations

**Date:** 2011

**Methodology:** Each block group was assigned the reading proficiency of the three elementary schools nearest the block group centroid. This process also considered school district boundaries, so as to assign data to block group only according to the district in which the block group resides.

**Math Proficiency**

**Description:** same as Reading Proficiency.

**Definition:** School math proficiency rates of three nearest in-district primary schools

**Field Code:** ED5

**Data Source:** Texas Education Agency

**Geography:** Point-based, School locations

**Date:** 2011

**Methodology:** Each block group was assigned the math proficiency of the three elementary schools nearest the block group centroid. This process also considered school district boundaries, so as to assign data to block group only according to the district in which the block group resides.

**High School Graduation Rate**

**Description:** This indicator represents the local schools’ proficiency and this is not the interim proficiency level but the final indicator how the local schools successfully educated students. Regardless school scores, the number and the rate of graduated students stand for the fact that how many students are eligible for the better achievement in their future
jobs. Thus, a higher value for this indicator has a positive effect on opportunity.

Definition: Graduation rate of three nearest in-district high schools
Field Code: ED6
Data Source: Texas Education Agency
Geography: Point-based, School locations
Date: 2010-2011 school year
Methodology: Each block group was assigned the graduation rate of the three high schools nearest the block group centroid. This process also considered school district boundaries, so as to assign data to block group only according to the district in which the block group resides.

Enrollment Rate
Description: This indicator represents the percentage of children who are 3 years old or older enrolled in local schools. This is the level of educational achievement as a starter level indicating that children in the neighborhood are securely and appropriately educated and protected. Thus, a higher value for this indicator has a positive effect on overall opportunity.
Definition: Percentage of children enrolled in school
Field Code: ED7
Data Source: American Communities Survey
Geography: Block Group
Date: 2006-2010
Methodology: Join the ACS table to block group layer based on block group ID.

Economics & Mobility Indicators

Unemployment Rate
Description: This data represents the estimated unemployment rate of workers 16 years and above. Living in a neighborhood with significant unemployment suggests that local and neighborhood social networks are not well connected to employment opportunities. Higher rates suggest lower economic opportunity in the area. Thus, a higher value for this indicator has a negative effect on opportunity.
Definition: Percentage of civilian labor force that is unemployed
Field Code: EM1
Data Source: American Community Survey
Geography: Block Group
Date: 2006-2010
Methodology: Join the ACS table to block group layer based on block group ID.

Job Access
Description: This data represents the number of jobs available within a 5 mile radius of block group, called a 5-mile buffer. This data is calculated by analyzing the number of estimated jobs in 2009 using TAZ employment data from ESRI within 5 miles of the center of each block group. The data is interpolated to the 5-mile buffer and assigned to the respective block group. Spatial isolation contributes to the job employment gap between central city residents and suburban residents, as indicated by a recent survey of spatial mismatch research. The higher values of this data set
suggest better access to job opportunity, especially for transit dependent populations or lower-income populations with less dependable private transportation.

Thus, more local jobs would have a **positive** effect on the overall economic opportunity.

**Definition:** Number of jobs within 5 miles of buffer from block group centroid

**Field Code:** EM2

**Data Source:** County Business Patterns

**Geography:** Zip Code

**Date:** 2009

**Methodology:** Create 5 mile buffer from block group centroid and spatial join the CBP layer (zip code) to block group (select “Average” box when you join them). Choose the average number of employee field for the indicator.

**Mean Commute Time**

**Description:** This data represents the mean commute time for each worker who works outside home. American Community Survey data provides aggregate commute time to work and total workers who do not work at home. Commute time is a general measure commonly utilized to assess the proximity to regional employment opportunities or transportation time needed to reach employment. The purpose of including this measure was to identify areas that are the most accessible (in respect to travel time) to the region’s employment opportunities. Higher commute times are an indicator of long distances from job markets. Higher values for this data set also mean that workers have relatively less time to attend to their personal needs compared to workers who spend less time traveling. A higher value for this indicator has a **negative** effect on the overall mobility.

**Definition:** Average travel time to work for workers ages 16+

**Field Code:** EM3

**Data Source:** American Community Survey

**Geography:** Block Group

**Date:** 2006-2010

**Methodology:** Get the median minutes for each break down box (ex. 0 to 5 minutes category will be 3 minutes for the median). Multiply the median minutes and number of commuters and divide them with total commuters.

**Transit Access**

**Description:** This data represents the access to transit service within the MSA region. Existing transit stops in the City of Austin and its vicinity are used to determine the access based on the location of transit stops. The buffer (0.5 mile) from each block group’s indicates the transit service area and this buffer is extracted for each block group using union function. The size and the portion of this buffer size in each block group represent how much each block group can deliver the transit service to the residents in the block group. The lack of viable transit options in most metropolitan areas limits options for those without cars and it prevents central city residents from accessing jobs. A higher value for this indicator has a **positive** effect on the overall mobility.

**Definition:** Percentage of census tract within ½-mile of transit station/stop

**Field Code:** EM4

**Data Source:** Capital Metro, CARTS, TxSU

**Geography:** Block Group

**Date:** 2012

**Methodology:** Create 0.5 mile buffer from transit stop (point layer) and calculate the area size of buffer in each block
group (use “Union” tool).

**Median Household Income**

Description: This data represents the overall wealth of neighborhoods. Higher median income neighborhoods are associated with the more opportunities in terms of education, jobs, and more investment in the neighborhoods. Inversely, it is also correlated to the lower possibility of dropout, poverty, unemployment, and foreclosure. Thus, a higher value for this indicator has a **positive** effect on the overall opportunity.

Definition: Median income of households

Field Code: EM5

Data Source: American Community Survey

Geography: Block Group

Date: 2006-2010

Methodology: Join ACS table to block group layer based on block group ID

**Housing & Environment Indicators**

**Neighborhood Poverty**

Description: This data represents the proportion of the population meeting Census Bureau poverty criteria in 2010. Higher percentages mean more concentrations of people at or below poverty level. Concentrated poverty is defined as a neighborhood where more than 40% of the population lives in poverty. Neighborhoods with extremely high poverty rates manifest community-wide problems due to the concentration of social issues associated with poverty. Concentrated poverty creates hostile environments, where all residents are prone to be impacted by violence and emotional or psychological stress.19 Thus, this indicator has a **negative** effect on the overall opportunity.

Definition: Percentage of population living below the Federal poverty line

Field Code: HE1

Data Source: American Community Survey

Geography: Census Tract 10'

Date: 2006-2010

Methodology: Join ACS table to block group layer based on block group ID. Get total number of “people living in poverty” per each block group.

**Vacancy Rate**

Description: This data represents the percentage of estimated vacant houses in 2007 in relation to overall housing stock. This data is calculated by dividing the number of vacant housing units by the total number of housing units in each census block group. Vacant properties are associated with many detrimental impacts to the surrounding neighborhood, including higher crime and greater public safety risk to children. Vacant properties have also been shown to lead to property value decline and population loss in the surrounding neighborhood. Thus, this indicator has a **negative** effect on the overall opportunity.

Definition: Percentage of residential housing units which are vacant

Field Code: HE2

Data Source: American Community Survey

Geography: Block Group

Date: 2006-2010
Methodology: Join ACS table to block group layer based on block group ID.

Proximity to Parks
Description: This data represents the area in sq. miles of the parks and open areas available within each census block group. Availability of open space and park land has environmental, health and social benefits. Thus, higher values of this indicator suggest better availability of parks and open spaces within the census tracts. This indicator has a positive effect on the overall opportunity.
Definition: Distance to nearest park centroid from tract centroid
Field Code: HE3
Data Source: ESRI Business Analyst
Geography: Block Group
Date: 2010
Methodology: Measure the distance between block group centroid and the nearest park centroid using “Near” tool.

Proximity to Toxic Release Sites
Description: This data represents the distance from the nearest toxic waste release sites to each census block group. Toxic Waste release site data is extracted from the EPA website. Studies have shown the correlation between proximity to such sites and health effects. Research has also shown the adverse effect of the location of these sites on home values. Taking these externalities into account, this indicator has a negative effect on public health and environmental quality. This measure is inversely related to opportunity.
Definition: Distance to toxic release site from census tract centroid
Field Code: HE4
Data Source: Environmental Protection Agency (EPA)
Geography: Census Tract 10’ (feet)
Date: 2011
Methodology: Measure the distance between block group centroid and the nearest toxic release site using “Near” tool.

Proximity to Brownfields
Description: This data represents the distance from the nearest brownfield site to each census block group. Brownfield data is extracted from the EPA website and retrieved from google earth data. Generally brownfields have negative effect on neighborhoods, public health, and environmental quality due to the untreated and non-neutralized soil. Therefore, this indicator has a negative effect on neighborhoods.
Definition: Distance to brownfield centroid from census tract centroid
Field Code: HE5
Data Source: Environmental Protection Agency (EPA)
Geography: Census Tract 10’ (feet)
Date: 2011
Methodology: Measure the distance between block group centroid and the nearest brown field centroid release site using “Near” tool.

Crime Rate
Description: This data represents the crime rate of block group summarized by local police jurisdiction in the region (or neighborhood-based crime rates in Austin). Crime rates were calculated using jurisdictional crime rates reported by the State of Texas and neighborhood-based crime data reported by the City of Austin. Crime is often identified by
residents as one of the most critical elements impacting neighborhood quality. Since high crime rates are associated with poor, unstable neighborhoods and indicate risk for crime victimization, this indicator has a **negative** effect on the overall opportunity.

**Definition:** Crime rate  
**Field Code:** HE6  
**Data Source:** Pcensus  
**Geography:** Block Group  
**Date:** 2010  
**Methodology:** N/A

**Food Desert**  
**Description:** This data represents the neighborhoods where lower income households are living in with lower access to local supermarket or large grocery stores. This indicator is called Food Desert by Unite State Department of Agriculture (USDA) and shows the inequality of neighborhoods based on the household income and the distance to the near large groceries or local supermarkets. Specifically, the poverty rate should be greater than or equal to 20% or median family income does not exceed 80% statewide (rural/urban) or metro-area (urban) median family income. Moreover, the food desert considers census tracts at least 500 people or 33 percent of the population located more than 1 mile (urban) or 10 miles (rural) from the nearest supermarket or large grocery store. This indicator has **negative** impacts on neighborhoods.  
**Definition:** Percentage of total population that is low-income and has low access to a supermarket or large grocery store  
**Field Code:** HE7  
**Data Source:** United State Department of Agriculture (USDA)  
**Geography:** Census Tract 10'  
**Date:** 2011  
**Methodology:** N/A ([http://www.ers.usda.gov/media/883903/err140.pdf](http://www.ers.usda.gov/media/883903/err140.pdf))

**Health Care Facility Access**  
**Description:** This data represents the availability and accessibility to health care facilities in proximity to the neighborhood. Access to health care facilities is critical to preventative health care. Hospitals are also included in this calculation due to their provision of clinic services and the clustering of external health care clinics in close proximity to hospitals. A higher value for this indicator suggests better proximity to these facilities. Thus, this indicator has a **positive** effect on overall opportunity.  
**Definition:** Health care facilities within 5 miles of a block group centroid  
**Field Code:** HE8  
**Data Source:** County Business Patterns  
**Geography:** Block Group  
**Date:** 2009  
**Methodology:** Select the health care data using NAICS code. Create 5 mile buffer from block group centroid and spatial join the CBP layer (zip code) to block group (select “Average” box when you join them). Choose the average number of employee field for the indicator.

**Home Ownership**
Description: This data represents the percentage of estimated owner occupied houses in 2006 in relation to overall housing stock. This data is calculated by dividing the number of owner occupied housing units by the total number of housing units in each block group. A higher value of this indicator suggests a more stable neighborhood with less resident turnover and problems associated with absentee landlords. Thus, this indicator has a **positive** effect on the overall opportunity.

**Definition:** Percentage of owner occupied housing (Owner occupied housing/total housing)

**Field Code:** HE9  
**Data Source:** American Community Survey  
**Geography:** Block Group  
**Date:** 2000, 2006-2010

**Methodology:** Join ACS table to block group boundary layer based on block group ID.

** Median Home Value**

Description: This indicator represents the median housing value of census block group in 2006. Home values are an indicator of neighborhood quality. A resident’s income alone will not necessarily determine whether they live in a home with a high property value or an area of high opportunity. Therefore, the median home value has a **positive** effect on the overall opportunity.

**Definition:** Median home value  
**Field Code:** HE10  
**Data Source:** American Community Survey  
**Geography:** Block Group  
**Date:** 2000, 2006-2010

**Methodology:** Join ACS table to block group boundary layer based on block group ID.

**Change Data**

* All change indicators are computed by subtracting 2010’ value from 2000’ value (change indicator = 2010’ value − 2000’ value).

**Vacancy Rate**

Description: Change in vacancy rate  

**Field Code:** CHG1  
**Data Source:** Census, American Community Survey  
**Geography:** Block Group  
**Date:** 2000, 2006-2010

**Methodology:** Join ACS table to block group boundary layer based on block group ID.

**Owner-Occupied Units**
Description: Change in owner-occupied rate
Field Code: CHG2
Data Source: Census, American Community Survey
Geography: Block Group
Date: 2000, 2006-2010
Methodology: Join ACS table to block group boundary layer based on block group ID.

Median Home Value
Description: Change in median home value
Field Code: CHG3
Data Source: Census, American Community Survey
Geography: Block Group
Date: 2000, 2006-2010
Methodology: Join ACS table to block group boundary layer based on block group ID.

Median Rent
Description: Change in gross median rent
Field Code: CHG4
Data Source: Census, American Community Survey
Geography: Block Group
Date: 2000, 2006-2010
Methodology: Join ACS table to block group boundary layer based on block group ID.

Housing Units
Description: Change in total housing units
Field Code: CHG5
Data Source: Census, American Community Survey
Geography: Block Group
Date: 2000, 2006-2010
Methodology: Join ACS table to block group boundary layer based on block group ID.

Poverty
Description: Change in poverty rate
Field Code: CHG6
Data Source: Census, American Community Survey

Geography: Block Group

Date: 2000, 2006-2010

Methodology: Join ACS table to block group boundary layer based on block group ID.

Race

Description: Change in non-White population

Field Code: CHG7

Data Source: Census, American Community Survey

Geography: Block Group

Date: 2000, 2006-2010

Methodology: Join ACS table (non-white = total population – white only population) to block group boundary layer based on block group ID.

Median Household Income

Description: Change in median household income

Field Code: CHG8

Data Source: Census, American Community Survey

Geography: Block Group

Date: 2000, 2006-2010

Methodology: Join ACS table to block group boundary layer based on block group ID.

Educational Attainment

Description: Change in college attainment rate

Field Code: CHG9

Data Source: Census, American Community Survey

Geography: Block Group

Date: 2000, 2006-2010

Methodology: Join ACS table to block group boundary layer based on block group ID.

Overlay Data

Race

Description: The population of Asians, Blacks, Latinos, and Whites

Field Code: OV1
Section 8 Vouchers
Description: The number of housing vouchers per census tract
Field Code: OV2
Data Source: HUD User
Geography: Census Tract
Date: 2009
Methodology: Join the voucher table to tract layer.

HUD Project Housing
Description: Location of HUD project housing
Field Code: OV3
Data Source: HUD User
Geography: Point
Date: 2008
Methodology: Geocode the addresses of project

Vulnerable Age Groups
Description: Children under 18 and seniors over 65 years of age
Field Code: OV4
Data Source: American Communities Survey
Geography: Block Group
Date: 2006-2010
Methodology: Join ACS table to block group boundary layer based on block group ID.

Linguistically Isolated Groups
Description: Number of people who cannot speak English at all
Field Code: OV5
Data Source: American Communities Survey
Geography: Block Group
Date: 2006-2010
Methodology: Join ACS table to block group boundary layer based on block group ID.

Senior Population
Description: Population over 65; Asian, Black, Latino, White
Field Code: OV6
Data Source: American Communities Survey
Geography: Block Group
Date: 2006-2010
Methodology: Join ACS table to block group boundary layer based on block group ID.

**Rural Area**

Description: Boundary of urban area
Field Code: OV7
Data Source: Census
Geography: N/A
Date: 2010
Methodology: N/A

**Median Income of Households with Children under 18 years**

Description: Median income of households with children under 18 years of age
Field Code: OV8
Data Source: American Communities Survey
Geography: Block Group
Date: 2006-2010
Methodology: Join ACS table to block group boundary layer based on block group ID.

**Segregation Index**

Description: This index measures the evenness with which two mutually exclusive groups are distributed across the geographic units that make up a larger geographic entity; for example, the distribution of blacks and whites across the census tracts that make up a metropolis. Its minimum value is zero and its maximum value is 100.
Field Code: OV9
Data Source: American Communities Survey
Geography: Block Group
Date: 2006-2010
Methodology: $\text{Segregation Index (0~100)} = \left(\frac{1}{2}\right) \times \sum \left(\frac{a_{i/B}}{w_{i/W}}\right)$

**Percent of Veterans**

Description: Percentage of population who are veterans
Field Code: OV10
Data Source: American Communities Survey
Geography: Block Group
Date: 2006-2010
Methodology: Join ACS table to block group boundary layer based on block group ID.

**Percent of SNAP of SSI**

Description: Percentage of population receiving food assistance (SNAP) or Social Security Insurance (SSI)
Field Code: OV11
Data Source: American Communities Survey
Geography: Block Group
Date: 2006-2010
Methodology: Join ACS table to block group boundary layer based on block group ID.
Child Population

Description: Population under 18; Asian, Black, Latino, White
Field Code: OV12
Data Source: American Communities Survey
Geography: Block Group
Date: 2006-2010
Methodology: none
The Geography of Opportunity in Austin and How It Is Changing