Appendix A: Opportunity Indicators for Duval County Children

Neighborhood Conditions

- **Neighborhood poverty rate**
  
  **Definition:** The proportion of the population meeting Census Bureau poverty criteria in 2000. 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.

  **References:**

  **Data source:** U.S. Census 2000

- **Population on public assistance**
  
  **Definition:** The percentage of population receiving public assistance. Census tracts with higher percentages suggest low economic opportunity, fewer jobs, thus more people depending on public subsidy to survive. Living in a neighborhood with significant populations on public assistance suggests that local and neighborhood social networks are not well connected to employment opportunities.

  **References:**

  **Data source:** U.S. Census 2000

- **Unemployment rate**
  
  **Definition:** The rate of unemployment of population 16 years of age and above. A growing body of research has found that social networks are the primary mechanisms for accessing employment opportunity. Living in a neighborhood with significant unemployment suggests that local and neighborhood social networks are not well connected to employment opportunities.

  **References:**
- Social Networks and the Employment Problem of the Urban Poor, David A. Reingold, *Urban Studies, Vol. 36, No. 11, 1907-1932, 1999*
- The Effects of Social Networks on Employment and Inequality By ANTONI CALVO’-ARMENGOL AND MATTHEW O. JACKSON, American Economic Review, 2004

*Data source:* U.S. Census 2000, ESRI Business Analyst Data 2009

- **Share of household headed by single mothers**
  
  **Definition:** The proportion of households with children under age 18 headed by a single mother.
  
  **References:**
  
  *Data source:* U.S. Census 2000

- **Home ownership rate**
  
  **Definition:** The percentage of estimated owner occupied houses 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 census tract. A higher value of this indicator suggests a more stable neighborhood with less resident turnover and problems associated with absentee landlords.
  
  **References:**
  
  *Data source:* ESRI Business Analyst Data 2009, U.S. Census 2000

- **Housing vacancy rates**
  
  **Definition:** The percentage of estimated vacant houses 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 tract. 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.

**References:**
For more information on the impacts of vacant and abandoned properties, visit the resource page of the National Vacant Property Campaign. Located on-line at: [http://www.vacantproperties.org](http://www.vacantproperties.org)

**Data source:** ESRI Business Analyst Data, USPS Vacancy Data from U.S. Department of Housing and Urban Development

- **Foreclosure rate**
  **Definition:** Percentage of foreclosures with respect to number of mortgages by census tract.

**References:**

**Data source:** U.S. Department of Housing and Urban Development

- **Adult educational attainment**
  **Definition:** The percentage of population of 25 years or older with an associate’s degree or higher. Higher levels of parent educational attainment are strongly associated with positive outcomes for children in many areas including school readiness, educational achievement, incidence of low birth weight, health-related behaviors including smoking and binge drinking, and pro-social activities such as volunteering. Children of more educated parents are also likely to have access to greater material, human, and social resources.

**References:**

**Data source:** ESRI Business Analyst Data 2009, U.S. Census 2000

- **Crime rates**
  
  **Definition:** The crime rate of census tracts summarized by local police jurisdiction in the region. Crime is often identified by residents as one of the most critical elements impacting neighborhood quality.

  **References:**

  **Data source:** Jacksonville Sheriff’s Office (2009)

**Education and School Related Factors**

- **School Poverty (Free/Reduced-Price Lunch)**

  **Definition:** The percentage of students eligible for free or reduced-price lunch.

  **References:**

  **Data source:** Florida Department of Education - Office of Education Information and Accountability Services, http://www.fldoe.org/eias/

- **Teacher Qualification (Teachers by Degree Level)**

  **Definition:** Percentage of teachers with a bachelor’s degree, master’s degree, specialist degree or doctorate degree.

  **References:**

  **Data source:** Florida Department of Education - Office of Education Information and Accountability Services, http://www.fldoe.org/eias/

- **Teacher Experience**

  **Definition:** The average years of experience of teachers in each school.

  **References:**
  - Brookings Papers on Education Policy 2004,


**Data source:** Florida Department of Education - Office of Education Information and Accountability Services, [http://www.fldoe.org/eias/](http://www.fldoe.org/eias/)

- **Student/Teacher Ratio**
  - **Definition:** The average number of students assigned to each teacher. This indicator reflects teacher workload and the availability of teachers’ services to their students.
  - **References:**
  - **Data source:** Florida Department of Education

- **Test Results (Math and Reading) - Florida Comprehensive Assessment Test (FCAT)**
  - **Definition:** The percentage of examinees placing at each achievement level on a range from Level 1 (lowest) to Level 5 (highest) in the mathematics and reading subtests of the FCAT for grades 3 through 10.
  - **References:**
  - **Data source:** Florida Department of Education – Office of Assessment and School Performance, [http://www.fldoe.org/asp/](http://www.fldoe.org/asp/)

- **Student Non-Promotion (Retention) Rate**
  - **Definition:** The percentage of students who are not promoted to the next grade at the end of each school year.
  - **References:**


**Data source:** Florida Department of Education - Office of Education Information and Accountability Services, [http://www.fldoe.org/eias/](http://www.fldoe.org/eias/)

**Health and Environmental Factors**

- **Rates of children with asthma, cancer, diabetes**
  
  **Definition:** The number of children with asthma (cancer, diabetes) per 100,000 by health zone or zip code.

  Children with asthma experience more absenteeism from school compared with their non-asthmatic peers, and excessive absenteeism is related to lower student grades, psychological, social, and educational adjustment. Some of environmental factors causing asthma, such as dampness and mold, cockroaches, and inadequate ventilation are more common in poor, urban settings.

  Children who are overweight or obese are at increased risk for physical and socio-emotional problems such as cardiovascular disease, type-2 diabetes, hepatic steatosis (a fatty liver), sleep apnea, high cholesterol, or asthma. Studies find that parents can play an important role in preventing and reducing child and adolescent obesity by promoting healthy eating through family meals, providing healthy foods in the home, limiting television watching and other sedentary behavior, and encouraging physical activity.

  **References:**
  

*Data source:* Florida Department of Health

- **Low birth weight babies**

  **Definition:** The number of low birth weight babies born in a specific time period by health zone or zip code. Low birth weight babies have higher levels of mortality, disability and impaired development than normal weight babies.

  **References:**

  *Data source:* Florida Department of Health

- **Teen birth**

  **Definition:** The number of teen births per health zone or zip code. Children born to teen mothers are more likely to be born prematurely, to be born at a low birth weight, and to die as infants, compared to children born to mothers in their twenties and early thirties. The children of teen mothers generally have poorer academic and behavioral outcomes than do children born to older mothers.

  **References:**

  *Data source:* Florida Department of Health
• **Access to healthcare facilities**
  
  **Definition:** The availability and accessibility to healthcare facilities in proximity to the neighborhood.

  Minority children experience multiple health disparities in medical and oral health, access to care, and use of services. One study reports that approximately 20% of physicians care for 80% of the black population in the United States and the physicians treating black patients may be less well trained clinically and may have less access to important clinical resources than physicians treating white patients. Studies also suggest that the causes of these disparities go beyond insurance coverage to include quality of care, public health measures, and community resources.

  **References:**

  **Data source:** ESRI Business Analyst Data

• **Availability of healthcare professional (or healthcare professional shortage)**
  
  **Definition:** The number of physicians working in the neighborhood relative to the population.

  **References:** (same as Access to healthcare facilities)

  **Data source:** Health Resources and Services Administration (HRSA) Bureau of Health Professions (BHPR)

• **Access to affordable food (Availability)**
  
  **Definition:** The number of grocery and food stores per 1000 people within each census tract. A larger number represents a higher availability of grocery stores to the local population.

  Inadequate food intake in children is associated with a number of serious health, behavior, and cognitive deficits. Studies also report higher behavioral problems in three-year-olds; in school-aged children, psychosocial deficits, as well as higher anxiety and depression; and, in adolescents, higher rates of depressive disorder and suicidal symptoms. Food insecure children experience smaller gains in math and reading achievement between kindergarten and third grade, and, among those ages 6 to 11, a higher likelihood of repeating a grade. Child food insecurity is also associated with a greater risk for being overweight. While the processes underlying this association are not completely understood, food insecurity can result in lower diet quality and less variety, both of which can contribute to being overweight.
References:

Data source: ESRI Business Analyst Data 2009

- **Exposure to toxic waste**
  
  **Definition:**
  - Proximity to toxic release sites – the number of toxic release sites within each census tract
  - Amount of toxic release – the amount of toxic chemicals released by nearby toxic release sites aggregated by census tract

Many studies find evidence of association between child health and development outcomes and exposure to environmental toxicants found in air, water, soil, house, foods, or consumer products. As the sources of these toxicants are closely related to where one lives, the residential location is an important factor in the “production” of health and spatial analysis called for as a useful analysis tool.

References:
**Access to parks and open spaces (Proximity and Accessibility)**

*Definition:* The area in square miles of the parks and open areas available within a 5-mile radius of the center of each census tract relative to local population.

*References:*
- Increasing walking - How important is distance to, attractiveness, and size of public open space?, Billie Giles-Corti PhD, Melissa H. Broomhall MPH, Matthew Knuiman PhD, Catherine Collins MBBS, Kate Douglas MBBS, Kevin Ng MBBS, Andrea Lange BA (Hon) and Robert J. Donovan PhD, *American Journal of Preventive Medicine*, Volume 28, Issue 2, Supplement 2, February 2005, Pages 169-176.

*Data source:* ESRI Business Analyst Data 2009
Appendix B. Calculating Opportunity Index

To calculate an opportunity index, the various opportunity indicators were first analyzed relative to the other block groups within the region by standardizing through the use of “z scores.” A z score is a statistical measure that quantifies the distance (measured in standard deviations) a data point is from the mean of a data set. The use of z scores allows data for a census tract to be measured based on their relative distance from the data average for the entire region. The final “opportunity index” for each census tract is based on the average z score for all indicators by category. The corresponding level of opportunity (very low, low, moderate, high, very high) is determined by sorting all census tracts into quintiles based on their opportunity index scores. Thus, the block groups identified as “very high” opportunity represent the top 20% of scores among block groups. Conversely, block groups identified as “very low” opportunity represent the lowest scoring 20% of block groups.

Z scores are helpful in the interpretation of raw score performance because they take into account both the mean of the distribution and the amount of variability (or the standard deviation). The z score indicates how far the raw score is from the mean, either above it or below it in standard deviation units. A positive z score is always above the median (upper 50%). A negative z score is always below the median (lower 50%) and a z score of zero is always exactly on the median or equal to 50% of the cases. Thus, when trying to understand the overall comparative performance of different groups with respect to a certain variable, we can assess how a certain group (of individuals, block groups, etc.) is performing with respect to the median performance for the certain variable. No weighting was applied to the various indicators and all indicators were treated as equal in importance. However, future analysis could weight specific indicators based on local input and community priorities to provide more meaningful and practical information.
Appendix C: Opportunity Maps for Duval County Children

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<tr>
<th>Map Number</th>
<th>Map Title</th>
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<tbody>
<tr>
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<td>Comprehensive Opportunity Analysis</td>
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<td>Map A-2</td>
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<td>Map A-6</td>
<td>Comprehensive Opportunity - 2009 (9 indicators)</td>
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<td>Map A-7</td>
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</tbody>
</table>
Map A-1: Comprehensive Opportunity Analysis
Duval County, FL

This map displays the spatial distribution of opportunity in Duval County based on education, health/environment and neighborhood indicators at the census block group level in 2000 with an overlay of high school attendance zones.

Sources: U.S. Census 2000, Florida Dept. of Education, ESRI 2009, Jacksonville Children’s Commission

Date: November 2, 2010

Map:
- Ocean, Lake, River
- County Boundary
- Opportunity Analysis by Block Group
  - Very Low Opportunity
  - Low Opportunity
  - Moderate Opportunity
  - High Opportunity
  - Very High Opportunity

Please refer to the inset map for detailed information.
Map A-2: Comprehensive Opportunity Analysis and Race Overlay
Duval County, FL

This map displays the spatial distribution of opportunity in Duval County based on education, health/environment and neighborhood indicators at the census block group level in 2000 with an overlay of non-white children (<18 years).

Sources: U.S. Census 2000, Florida Dept. of Education, ESRI 2009, Jacksonville Children's Commission

Date: November 2, 2010
Map A-3: Neighborhood Opportunity Analysis
Duval County, FL

This map displays the spatial distribution of opportunity in Duval County based on neighborhood indicators at the census block group level in 2000 with an overlay of high school attendance zones.

Sources: U.S. Census 2000, Florida Dept. of Education, ESRI 2009, Jacksonville Children’s Commission

Date: October 19, 2010
Map A-4: Education Opportunity Analysis
Duval County, FL

This map displays the spatial distribution of opportunity in Duval County based on education indicators at the census block group level in 2000 with an overlay of high school attendance zones.

Sources: U.S. Census 2000, Florida Dept. of Education, ESRI 2009, Jacksonville Children’s Commission
Date: October 19, 2010
Map A-5: Health and Environmental Opportunity Analysis
Duval County, FL

This map displays the spatial distribution of opportunity in Duval County based on health and environment indicators at the census block group level in 2000 with an overlay of high school attendance zones.

Sources: U.S. Census 2000, Florida Dept. of Education, ESRI 2009, Jacksonville Children’s Commission
Date: October 19, 2010
Map A-6: Comprehensive Opportunity Analysis - 2009 with Subset of indicators
Duval County, FL

This map displays the spatial distribution of opportunity in Duval County based on most recent data on a subset of education, health/environment, and neighborhood indicators to compare with comprehensive opportunity in 1990 at the census block group level.

Sources: U.S. Census 2000, Florida Dept. of Education, ESRI 2009, Jacksonville Children’s Commission
Date: November 2, 2010
Map A-7: Comprehensive Opportunity Analysis - 1990
Duval County, FL

This map displays the spatial distribution of opportunity in Duval County based on education, health/environment and neighborhood indicators, at the census block group level in 1990.

Sources: U.S. Census 1990, Florida Dept. of Education, EPA
Date: November 2, 2010