

Appendix A
Neighborhood Profiles: User Guide

Social Dimension

Percent of Persons over Age 64 - The proportion of the population that is 65 years and older represents the Aged Dependency Ratio.

The Aged Dependency Ratio is equal to the total number of aged persons 65 years and older divided by the total population for each neighborhood.

Source: Claritas, 2005.

Percent of Persons 5 and 19 – The proportion of the population that is between the ages of 5 and 19 represents the Juvenile Dependency Ratio.

The Juvenile Dependency Ratio is equal to the total number of juveniles between the ages of 5 and 19 divided by the total population for each neighborhood.

Source: Chesapeake Public Schools, 2005.

Infant Wellness Index – Index based on births to adolescents, low birth weight and no prenatal care in the first trimester of pregnancy.

All 2003 birth records for the City of Chesapeake were address-matched using GIS. The point data were then identified with the neighborhood boundaries to get a total number of births, the number of children born to women under the age of 18, the number of babies that weighed 2500 grams or less (approximately 5 ½ pounds), and the number of mothers who received no prenatal care in the first trimester.

Each neighborhood is indexed based on the following criteria.

- Age of Birth Mother – If the age of the birth mother is less than 18 years, the birth is given a score of 0. For births by mother 18 or older, the birth is given a score of 1.
- Birth Weight – If the birth weight equals or is less than 2500 grams, the birth is given a score of 0. If the birth weight exceeds 2500 grams, the birth is given a score of 1.
- Prenatal Visits – If the mother had not prenatal visits in the first trimester, the birth is given a score of 0. If the mother had at least one prenatal visit in the first trimester, the birth is given a score of 1.

The maximum score for each birth is 3. The actual birth scores are summarized for each neighborhood. The resulting number is the Baby Wellness Index score for the neighborhood.

Sources: Virginia Health Department, Birth Certificate Data, 2003.

Percent of Child Welfare Cases - Percentage of children who are in the following categories as of May 15, 2005:

Child Protective Services
Resident of the Juvenile Detention Center

The percentage of child welfare cases is equal to the total number of cases divided by the total number of children.

Source: Department of Human Services, Chesapeake, 2005.

Percent of Persons Receiving TANF – The percentage of persons receiving Temporary Aid to Needy Family (TANF)

The percentage of persons receiving TANF is equal to the total number of people receiving TANF divided by the total number of people living in the neighborhood..

Source: Chesapeake Human Services, 2006.

Percent of Persons Receiving Food Stamps – The percentage of persons who are receiving food stamps.

The percentage of persons receiving food stamps is equal to the total number of persons receiving food stamps divided by the total number of people living in the neighborhood.

Source: Chesapeake Human Services, 2006.

Youth Opportunity Index - A measure of the potential opportunities for youth to get involved in extra-curricular activities within the neighborhood.

“Opportunities” were defined as locations within the community that offered programs and activities for youth up to age 18. Locations included YMCA/YWCAs, churches, schools, recreation centers, community centers and libraries. Opportunity locations were scored as follows:

Churches—Because churches provide services beyond their neighborhood boundaries, each church was buffered by a ¼-mile ring that was considered to be a reasonable walking distance for youth to utilize the services offered by the church. Each church was given a score of 1, which was a minimal score that identified the church as a potential activity center. Each residential unit captured by the buffer zone was given a score of 1.

Schools—Schools were given a score of 1. Because these schools provided services beyond their neighborhood boundaries, each school was buffered by a ¼-mile ring that was considered to be a reasonable walking distance for youth to utilize the services offered by the school. Each residential unit captured by the buffer zone was assigned a score of based on the programs provided by the adjacent school.

Recreation Centers, Community Centers and YMCAs—Because these centers provide services beyond their neighborhood boundaries, each center was buffered by a ¼-mile ring that was considered to be a reasonable walking distance for youth to utilize the services offered by the center. Each center was given a score of 3, which was assigned to every residential unit within the buffer zone.

Libraries—Libraries were scored using the same methodology as the Centers except that a library was given a score of 2, indicating that it potentially offered greater services than a church but fewer than a Recreation Centers, Community Centers or YWCA/YMCAs. Each residential unit that fell in the buffer zone was assigned a score of 2.

Each residential unit within a neighborhood had the potential of receiving a score ranging from 0 to 7. The score for each neighborhood was calculated based the youth opportunity score for each residential unit. This composite score represents the total number and types of opportunities available to youth.

Source: South Hampton Roads YMCAs, 2005.
City of Chesapeake Library System, 2005.
City of Chesapeake Park and Recreation Department, 2005.
Chesapeake Public Schools, 2005.

Crime Dimension

Category A Victim Crime Rate - The rate of category A victim crime in each neighborhood as compared with the rate of category A victim crime in the City of Chesapeake.

The street block locations of each category A victim crime offenses in 2004 were address-matched using GIS. For the purpose of this study, Category A victim crimes include homicides, rapes, robberies, and aggravated assaults. The point data were then intersected with all neighborhoods to get the total number of crimes per neighborhood. The total number of Category A victim crimes was also summed for the City of Chesapeake.

The population of each neighborhood and the City of Chesapeake was calculated. The number of category A victim crime incidents for each neighborhood was divided by the population of each neighborhood to get the rate of category A victim crime. The total number of category A crime incidents for the City of Chesapeake was divided by the population of Chesapeake to get the rate of category A victim crime. The category A victim crime rate for each neighborhood was then compared to the city rate.

The Location Quotient method was used for the comparison. The results indicate the share of all category A victim crime in the City of Chesapeake captured by the individual neighborhood. For instance, a score of 1.00 indicates that the particular neighborhood has a rate of category A victim crime that equals the city rate.

Sources: Chesapeake Police Department, 2005.
<http://www.fbi.gov/ucr/nibrs/manuals/v1all.pdf>

Category A Non-Victim Crime Rate - The rate of category A non-victim crime in each neighborhood as compared with the rate of category A non-victim crime in the City of Chesapeake.

The street block locations of category A non-victim crime offenses in 2004 were address-matched using GIS. For the purpose of this study, category A non-victim crimes include burglaries, larcenies, vehicle thefts, arsons, and vandalisms. The point data were then intersected with all neighborhoods to get the total number of crimes per neighborhood. The total number of category A non-victim crimes was also summed for the City of Chesapeake.

The population of each neighborhood and the City of Chesapeake was calculated from Census Block statistics. The number of category A non-victim crime incidents for each neighborhood was divided by the population of each neighborhood to get the rate of category A non-victim crime. The total number of category A non-victim crime incidents for the City of Chesapeake was divided by the population of Chesapeake to get the rate of category A non-victim crime. The rate of category A non-victim crime per population for each neighborhood was then compared to the rate of category A non-victim crime per population for the city.

The Location Quotient method was used for the comparison. The results indicates the share of all category A non-victim crimes in the City of Chesapeake captured by the individual neighborhood. For instance, a score of 1.00 indicates that the particular neighborhood has a rate of category A non-victim crime that equals the city rate.

Sources: Chesapeake Police Department, 2005.

<http://www.fbi.gov/ucr/nibrs/manuals/v1all.pdf>

Category B Crime Rate - The rate of Category B crime in each neighborhood as compared with the rate of category B crime in the City of Chesapeake.

The street block locations of category B crime offenses in 2004 were address-matched using GIS. For the purposes of this study, Category B crimes encompass all crimes that are not Category A offenses. These crimes include but are not limited to disorderly conduct, driving under the influence, and trespassing.

The population of each neighborhood and the City of Chesapeake was calculated from Census Block statistics. The number of category B crime incidents for each neighborhood was divided by the population of each neighborhood to get the rate of category B crime. The total number of category B crime incidents for the City of Chesapeake was divided by the population of Chesapeake to get the rate of category B crime. The rate of category B crime per population for each neighborhood was then compared to the rate of category B crime per population for the city.

The Location Quotient method was used for the comparison. The results indicate the share of all category B crime in the City of Chesapeake captured by the individual

neighborhood. For instance, a score of 2.00 indicates that the particular neighborhood has a rate of category B crime that equals the city rate.

Sources: Chesapeake Police Department, 2005.

<http://www.fbi.gov/ucr/nibrs/manuals/v1all.pdf>

Physical Dimension

Percent Home Ownership - Percentage of all residential units that were owner-occupied in 2004.

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use. The records were summarized for each neighborhood by residential units.

From each neighborhood, the number of owner-occupied units and total occupied units were calculated. The owner-occupied units were divided by the total occupied-units to get the percent of home ownership for each neighborhood.

Sources: Information Technology, Chesapeake, 2005.

Real Estate Assessor, Chesapeake, 2005.

U.S. Census, 2000.

Percentage of Neighborhood that is Residential – The proportion of the neighborhood area that is residential, whether developed or not.

The percentage is equal to the total area in each neighborhood that is residentially developed or zoned divided by the total area of each neighborhood.

Sources: Information Technology, Chesapeake, 2005.

Percentage of Residential Apartment Units

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use. The records were summarized for each neighborhood by residential use type.

The total number of apartment units was then divided by the total number of residential units for each neighborhood to get the percentage of residential units that are apartments.

Source: Information Technology, Chesapeake, 2005.

Real Estate Assessor, Chesapeake, 2005.

Percentage of Single Family Dwellings Older than 50 Years - Percent of single family dwellings older than 50 years.

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use and age. The records were summarized for each neighborhood by single family units.

For each record, houses older than 50 years were identified. The total number of single family dwellings older than 50 years was then divided by the total number of single family dwellings for each neighborhood to get the percentage of single family dwelling older than 50 years.

Source: Information Technology, Chesapeake, 2005.
Real Estate Assessor, Chesapeake, 2005.

Percent Code Enforcement – An index of based on the code enforcement violations for each neighborhood.

The violations recorded for 2003 and 2004 were address-matched with GIS. This point data were identified with neighborhood boundaries to get the total number of code enforcement violations for each neighborhood.

Each violation was ranked in severity based on a multiplier described below:

Properties coded as demolitions were given a score of 5. These structures are 50% damaged or dilapidated. Properties that are ordered to board up their windows and doors and secured were given a score of 3. These structures are vacant and are considered unsafe.

Properties that are red tagged are given a score of 2. Virginia Natural Gas has determined an unsafe condition exists.

Structures that have property maintenance violation are given a score of 2.

Properties that have weeds, debris, or graffiti are given a score of 1.

The scores for each neighborhood were summarized and divided by the total number of parcels in the neighborhood. The values were classified into the following:

High – 0.22+
Medium – 0.10 – 0.22
Low – 0.0 – 0.10

Source: Neighborhood Services, Chesapeake, 2005.

Sidewalk Index – The percentage of pedestrian accessible streets that have a sidewalk on at least one side.

Using digital imagery, each pedestrian accessible street segment was assessed to determine if a sidewalk was present on at least one side of the street.

The number of street miles with sidewalks was divided by the total number of street miles to obtain the percentage of pedestrian accessible streets that have sidewalks on at least one side. The values were categorized using the following:

High – 50%+
Medium – 25% - 50%
Low – 0% - 25%

Source: Information Technology, Chesapeake, 2005.

Percent of Persons with Access to Public Transportation – The percentage of neighborhood residents, who live within walking distance of public transportation, defined using the Chesapeake Area Transit System bus stops.

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use and the total number of residential units was calculated for each neighborhood.

The bus stops were buffered by ¼ mile using GIS. The tax parcels that fell within the buffer boundaries were used to calculate the number of residential units accessible to public transportation. The number of residential units accessible to public transportation was divided by the total number of residential units to get the percentage of residents accessible to public transportation for each neighborhood.

Source: Hampton Roads Transportation System, 2005.

Percent of Persons with Access to Basic Retail Facilities – The percentage of neighborhood residents who live near a grocery store and/or a pharmacy.

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use and the total number of residential units was calculated for each neighborhood.

Grocery stores and pharmacy addresses were address matched in GIS and buffered by 1 mile. The tax parcels that fell within the buffer boundaries were used to calculate the number of residential units accessible to basic retail. The number of residential units accessible to basic retail was divided by the total number of residential units to get the percentage of residents accessible to basic retail for each neighborhood.

Sources: Information Technology, Chesapeake, 2005
Real Estate Assessor, Chesapeake, 2005.
BellSouth Yellow Pages, 2005.

Percent of Persons with Access to Park Facilities – The percentage of neighborhood residents living within ¼ mile of a neighborhood park and 1 mile of a district park.

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use and the total number of residential units was calculated for each neighborhood.

Neighborhood parks were buffered by ¼ mile and district parks were buffered by 1 mile. The tax parcels that fell within the buffer boundaries were used to calculate the number of residential units accessible to parks. The number of residential units accessible to parks and recreation was divided by the total number of residential units to get the percentage of residents accessible to parks for each neighborhood.

Sources: Recreation and Parks, Chesapeake, 2005.
Information Technology, Chesapeake, 2005.
Real Estate Assessor, 2005.

Percent of Persons near Noxious Facilities – The percentage of neighborhood residents living within ¼ mile of a noxious facility.

Noxious facilities include all facilities contained in the Aerometric Information Retrieval System (AIRS), a computer based repository for information about air pollution maintained by the Environmental Protection Agency. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories. The geographic coordinates provided by this database were used to create a point system representing their locations.

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use and the total number of residential units was calculated for each neighborhood.

Each noxious facility was buffered by ¼ mile. The residential parcels that fell within the buffer boundaries were used to calculate the number of residential units near noxious facilities. The number of residential units near noxious facilities was divided by the total number of residential units to get the percentage of residents near noxious facilities for each neighborhood.

Sources: <http://www.epa.gov/enviro/html/airs/index.html>, 2005.
Information Technology, Chesapeake, 2005.
Real Estate and Assessment, Chesapeake, 2005.

Drainage Index – An index that represents the how well a neighborhood can handle storm water runoff based on existing infrastructure.

The percentage of each neighborhood with poor drainage was calculated using a digitized soil database. Any soil ranked poorly or very poorly drained was considered an area with poor drainage. The area of a neighborhood with poorly drained soiled was divided by the entire area of the neighborhood to obtain the percentage of a neighborhood with poorly drained soil.

The percentage of each neighborhood reporting storm water problems was calculated. The number of reported storm water problems between Jan 1, 2004 and May 31st, 2005 were summarized for each neighborhood. This summarized value was divided by the number of single family residential units.

The percentage of each neighborhood with infrastructure greater than 50 years old was calculated. The residential area older than 50 years old was divided by the total area residential area to obtain the percentage of residential areas in the neighborhood older than 50 years.

The calculated values were multiplied to obtain the drainage index and were categorized below:

Average – 0 .0 - 0.15
Low – 0.15 – 0.93

Source: Public Works, Chesapeake, 2005.
NRCS, U.S. Department of Agriculture, 2005.

Percent of Residential Units with Private Well Failures – The proportion of residences that have known private well failures.

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use and the total number of residential units was calculated for each neighborhood.

The percentage is equal to the total number of residential units with known private well failures divided by the total number of residential units in the neighborhood.

Source: Virginia Department of Health, 2005.
Information Technology, Chesapeake, 2005.
Real Estate Assessor, Chesapeake, 2005.

Percent of Residential Units with Septic System Failures – The proportion of residences that have known septic system failures.

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use and the total number of residential units was calculated for each neighborhood.

The percentage is equal to the total number of residential units with known septic system failures divided by the total number of residential units in the neighborhood.

Source: Virginia Department of Health, 2005.
Information Technology, 2005.
Real Estate and Assessment, 2005.

Economic Dimension

Percent Affordable Housing – The percentage of single family dwellings sold in 2003 and 2004 that were affordable.

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use and sales activity. The total number residential units sold in 2003 and 2004 were calculated for each neighborhood.

By using the Housing and Urban Development (HUD) median household income of \$55,900 for Chesapeake, VA in 2004 and a 5% down payment, and a 6% interest rate, a house valued at approximately \$170,000 could be purchased.

The number of single family dwellings that sold at or below \$170,000 in 2004 was summarized for each neighborhood and was divided by the total number of single family sold in each neighborhood to obtain the percentage of affordable single family dwellings sold in each neighborhood.

Source: Department of Housing and Urban Development, U.S., 2005.
Information Technology, Chesapeake, 2005.
Real Estate and Assessment, Chesapeake, 2005.

Percent Housing Reinvestment – The percentage of single family units that were replaced, added on, to or remodeled between 1999 and 2004.

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use and the total number of residential units was calculated for each neighborhood.

Using the certificate of occupancy database, the total number of single family units that were replaced, added on to or remodeled was divided by the total number of single family units to obtain the percentage of single family units that were replaced, added on to, or remodeled for each neighborhood.

Source: Information Technology, Chesapeake, 2005
Real Estate and Assessment, Chesapeake, 2005
Planning Department, 2005.

Change in Housing Values– Percent change in residential house value was calculated using the following equation:

$$\frac{2005 \text{ assessed} - 2004 \text{ assessed value}}{2004 \text{ assessed value}} * 100 = \% \text{ Change in House Value}$$

Source: Information Technology, 2005.
Real Estate Assessor, 2005.

Percent Change in Income – Percent change in median household income value was calculated using the following equation:

$$\frac{2005 \text{ Income} - 2000 \text{ Income}}{2000 \text{ Income}} * 100 = \% \text{ Change in MHI}$$

Source: Claritas, 2005.

Percent of Residential Properties that are Tax Delinquent - The percentage of residential properties owner who have failed to pay their property taxes.

By utilizing the tax parcel database, each tax record was assigned to a neighborhood using GIS. Each tax record was analyzed for residential use and the total number of residential units was calculated for each neighborhood.

The number of single family properties that have not paid their property taxes for 2004 as of September 2005 was divided by the total number of single family properties to obtain the percentage of single family properties that are tax delinquent.

Source: Information Technology, Chesapeake, 2005
Real Estate and Assessment, Chesapeake, 2005
Treasurer's Office, Chesapeake, 2005

Population Growth – Percent change in population from 2000 to 2005. The following equation was used:

$$\frac{\text{2005 population} - \text{2000 population}}{\text{2000 population}} * 100 = \text{Percent Change in Population}$$

Sources: Real Estate Assessor, Chesapeake, 2005.
Information Technology, Chesapeake, 2005

Comments: Urban, Suburban, and Rural Overlays were adopted by City Council in May 2005. Urban Overlay areas allow up to 12 units per acre, Suburban Overlay areas allow up to 4 units per acre, and Rural Overlay areas require 25 acres per unit. The information was included to provide the user additional information on how the neighborhood may develop in the future.

Source: Planning, Chesapeake, 2006.