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Introduction - Collecting Data

Collecting data is an important part of the assessment process. A huge quantity of data exists and a successful project will rely on multiple sources for various levels of study areas. Federal, State, and Local government sources, as well as private research centers, are listed as resources for this section. The data collected can be mapped, displayed in tables, or used to create graphs or charts.

Having focus is important to finding the right data to assess the issue at hand. This THA Toolkit will help you know what data are needed in two ways:

1. Questions on the THA Checklist
2. Examples of GIS Maps with protocols

Organizing Data

Collecting data requires a system of organization. Create new folders for downloaded data and know where you store all map, data, and Word documents. Be sure to label all files in a clear manner. The best way to approach labeling and organization is to label in a succinct way that recalls what the data shows and which file is the most recent version.

Transportation and Housing Alliance Data Sources and Definitions:

A majority of the information will be obtained through the US Census Bureau. Other sources of data include local governments, transportation providers and state agencies such as the Virginia Employment Commission. The section below outlines a list of data and their sources that pertain to the THA toolkit.

US Census Bureau:

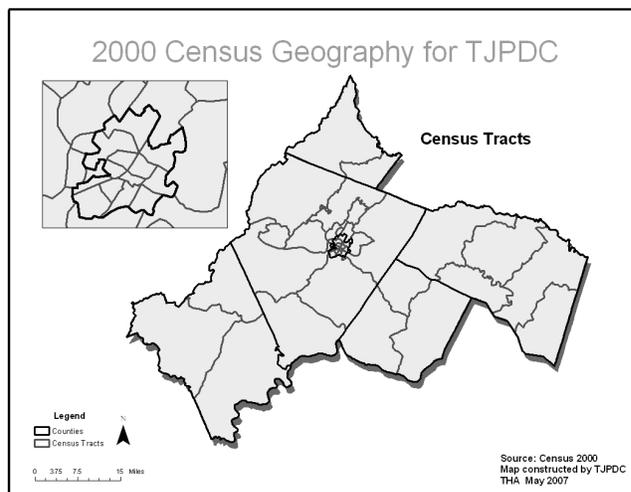
➤ **Census geography**

A collective term referring to the types of geographic areas used by the Census Bureau in its data collection and tabulation operations, including their structure, designations, and relationships to one another.

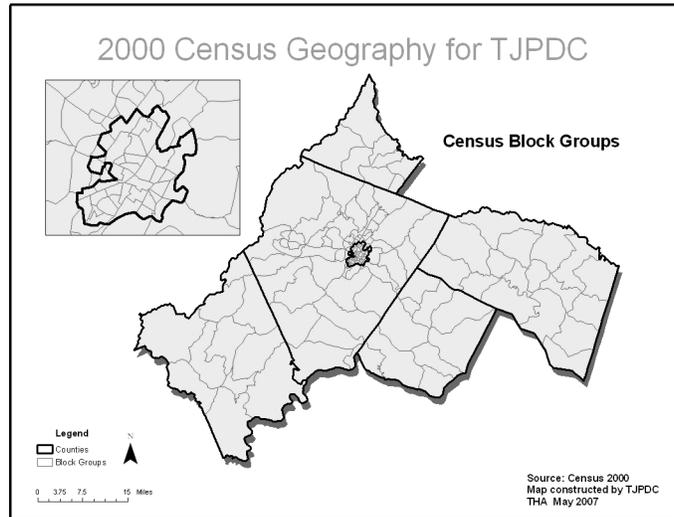
○ **Census tract**

Census tracts are the largest statistical subdivisions of a county delineated by a local committee of census data users for the purpose of presenting data. Census tract boundaries normally follow visible features, but may follow governmental unit boundaries and other non-visible features in some instances. They always nest within counties or cities. Designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time of establishment, census tracts average about 4,000 inhabitants.

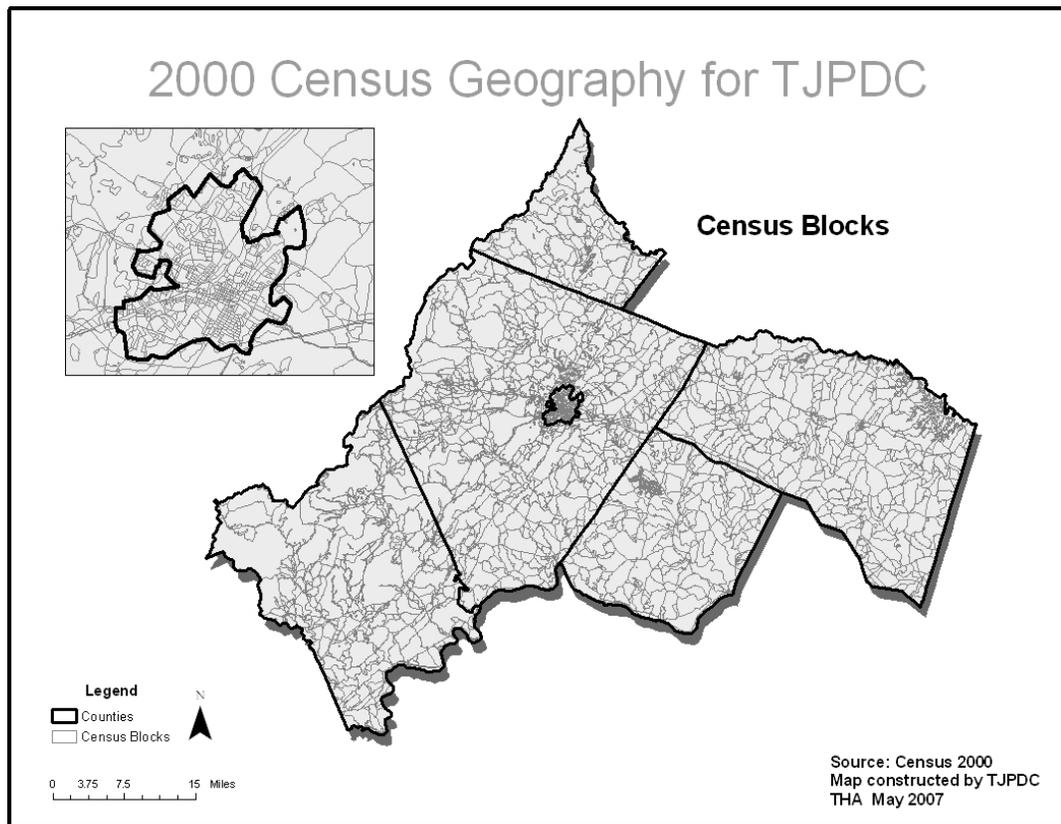
They may be split by any sub-county geographic entity.



- **Block group (BG)**
A subdivision of a census tract (prior to 2000, a block numbering area), a block group is the smallest geographic unit for which the Census Bureau tabulates sample data. A block group consists of all the blocks within a census tract with the same beginning number.
Example: block group 3 consists of all blocks within a 2000 census tract numbering from 3000 to 3999.



- **Block**
A subdivision of a census tract (prior to 2000, a block numbering area), a block is the smallest geographic unit for which the Census Bureau tabulates 100-percent data. Many blocks correspond to individual city blocks bounded by streets, but blocks, especially in rural areas, may include many square miles and have some boundaries that are not streets.



- **Disability**
A long-lasting physical, mental, or emotional condition. This condition can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning, or remembering. This condition can also impede a person from being able to go outside the home alone or to work at a job or business.

- **Income**
"Total income" is the sum of the amounts reported separately for wages, salary, commissions, bonuses, or tips; self-employment income from own non-farm or farm businesses, including proprietorships and partnerships; interest, dividends, net rental income, royalty income, or income from estates and trusts; Social Security or Railroad Retirement income; Supplemental Security Income (SSI); any public assistance or welfare payments from the state or local welfare office; retirement, survivor, or disability pensions; and any other sources of income received regularly such as Veterans' (VA) payments, unemployment compensation, child support, or alimony.
- **Household**
A household includes all the people who occupy a housing unit as their usual place of residence.
- **TIGER database**
TIGER[®] is an acronym for the Topologically Integrated Geographic Encoding and Referencing (System or database). It is a digital (computer-readable) geographic database that automates the mapping and related geographic activities required to support the U.S. Census Bureau's census and survey programs.

The U.S. Census Bureau developed the TIGER System to automate the geographic support processes needed to meet the major geographic needs of the 1990 census: producing the cartographic products to support data collection and map presentations, providing the geographic structure for tabulation and dissemination of the collected statistical data, assigning residential and employer addresses to the correct geographic location and relating those locations to the geographic entities used for data tabulation, and so forth. The content of the TIGER database is undergoing continuous updates and is made available to the public through a variety of TIGER/Line[®] files that may be obtained free of charge from the Internet or packaged on CD-ROM or DVD from Customer Services, U.S. Census Bureau, Washington, DC 20233-1900.

Virginia Employment Commission:

- **VAWC** - Virginia's Workforce Connection. Online resource for employment, demographic and labor attributes and data:
- **Average Monthly Employment (AME)** - Computed as the average of the three monthly employment figures in a given calendar quarter.
- **Average Quarterly Wages (AQW)** - Computed as total quarterly wages divided by average monthly employment.
- **Average Weekly Wages (AWW)** - Computed as average quarterly wages divided by 13.
- **Civilian Non-Institutional Population** - Included are persons 16 years of age and older residing in the 50 states and the District of Columbia, who are not inmates of institutions (e.g., penal and mental facilities, homes for the aged), and who are not on active duty in the Armed Forces.
- **Commuting Patterns** - A labor market concept that refers to worker flows between municipalities and/or counties. Data representing commuting patterns is collected through the decennial census and is available for larger municipalities and counties; measures include the number of workers that travel to jobs between cities and counties. Data on commuting patterns can reveal the most economically developed areas, such as those that draw large amounts of labor, or they may reveal the need for economic development, such as those cities and counties that export large amounts of labor.

- **Earnings** - Money that is received as a result of the normal business activities of an individual or a business. For example, most individual's income is the money received from a regular paycheck.
- **Personal Income** - A measure of the net earnings, rental income, personal dividend income, personal interest income, and transfer payments by place of residence before the deduction of personal income taxes and other personal taxes.
- **Wages** - Consist of earnings before payroll deductions, including production bonuses, incentive earnings, commissions and cost-of-living adjustment.

US Department of Labor: Bureau of Labor Statistics

- The BLS contains much of the same information provided by VEC. In addition, the BLS allows for online mapping of unemployment rates. The BLS also provides historical records to monitor and determine trends in the community.

Virginia Department of Transportation

- **Daily Vehicle Miles Traveled** - One vehicle traveling the distance of one mile equals one VMT. This measure is used to estimate congestion, fuel consumption and a host of other key transportation-related factors.
- **AADT** –Average Annual Daily Traffic. Annual average of the amount of traffic on a road.

Local Government

- **Parcel** – A plot, tract or division of land. A lot in a subdivision is typically included into this definition when using GIS data, yet is not included in this definition by the National Society of Professional Surveyors.
- **Planimetrics** – Data that is featured in only two dimensions. A map that displays only the x,y locations of features and represents only horizontal distances such as a road map.
- **Zoning** - The application of local government regulations that permit certain land uses within geographic areas under the government's jurisdiction. Zoning regulations typically set a broad category of land use permissible in an area, such as residential, commercial, agricultural, or industrial. Zoning regulations can also set constraints on building construction within areas, which may affect factors such as the maximum height of structures, minimum setbacks from property lines, the amount of parking that must be provided, or the density of housing.

Resources for Data on the Web

U.S. Census Bureau

www.census.gov

- American FactFinder Tab: data from the U.S. Census
- Geography Tab: Census Tracts, Block Groups, County and City Boundaries as shapefiles.

Virginia Employment Commission

<http://www.vec.virginia.gov/vecportal/services.cfm#online>

- Labor Market Information
- Information for employers

Virginia's Workforce Connection (VAWC)

<http://www.vawc.virginia.gov/analyzer/default.asp>

- Data on Localities throughout Virginia
- Community Profiles
- Query feature to run personalized reports

Virginia Integrated Services Program (ISP)

<http://www.vita.virginia.gov/isp/>

The Geospatial Services tab links you to a variety of geospatial products and services to state agencies, local governments, non-profits, education and the private sector.

- GIS Resources for Local Governments
- GIS Contacts throughout the Commonwealth (public, private, universities, etc.)
- Reference Library

Virginia Economic Development Partnership (VEDP)

www.yesvirginia.org - "Data Center"

- Hospital, Fire and Rescue, and other public facility locations
- Various districts, zones and grids

Virginia Department of Transportation (VDOT)

<http://gis.virginiadot.org/>

- Roadway Network GIS Shapefiles

University of Virginia Geostat Center

http://fisher.lib.virginia.edu/collections/gis/virginia_gis_data.html

- Links to GIS Data resources for localities throughout the Commonwealth
- Links to GIS Shapefile resources for localities throughout the Commonwealth

Weldon-Cooper Center for Public Service (UVA)

<http://www.coopercenter.org/>

- Various Population and Statistical Information

Access Virginia

<http://www.accessva.org/>

- Accessible Housing Resources

Collecting Census Data

Collecting Census Data

I. Basic Concept

Using US Census data for GIS mapping is a step-by-step process, which can be repeated using different data to produce different thematic maps. The maps will perform the “magic” of making numbers in a spreadsheet portray a picture by displaying the data spatially.

The **Disabilities by Block Group** map associated with this protocol is the end result of following the step-by-step protocols for **Collecting Census Data** and **Mapping Census Data**. These directions specify the region for Planning District 10, but using the shapefiles provided on the THA Toolkit CD, you can create a similar themed map for your study area. In this section we first collect the data.

II. Basic Formula

This protocol requires

1. A folder on your desktop for storing data
2. Block Group shapefiles (provided the THA Toolkit CD)
3. An up-to-date web browser
 - i. Internet Explorer 8 – www.microsoft.com (free download/upgrade)
 - ii. Firefox – www.firefox.com (free download/upgrade)
4. Microsoft Excel
5. WinZip (www.winzip.com for free version) or similar program for decompressing files

III. Detailed Formula

Begin by navigating to www.census.gov

Step 1. www.census.gov

From the US Census website.

- Click on “American FactFinder” in the left hand column
- Click on “Datasets”
- Click on “Decennial Census”

Step 2. Summary File 3

The screenshot shows the American FactFinder website interface. The browser title is "United States - Data Sets - American FactFinder - Windows Internet Explorer". The address bar shows the URL: http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_submenuId=datasets_1&_lang=en. The page content is for the year 2000 and lists four summary files:

- Census 2000 Summary File 1 (SF 1) 100-Percent Data**
Summary File 1 presents counts and information [age, sex, race, Hispanic/Latino origin, household relationship, whether residence is owned or rented] collected from all people and housing units.
- Census 2000 Summary File 2 (SF 2) 100-Percent Data**
Population and housing characteristics iterated for many detailed race and Hispanic or Latino categories, and American Indian and Alaska Native tribes.
[SF 2 Thresholds](#)
- Census 2000 Summary File 3 (SF 3) - Sample Data**
Summary File 3 presents detailed population and housing data (such as place of birth, education, employment status, income, value of housing unit, year structure built) collected from a 1-in-6 sample and weighted to represent the total population.
[Comparing SF 3 Estimates with Corresponding Values in SF 1 and SF 2](#)
- Census 2000 Summary File 4 (SF 4) - Sample Data**
Summary File 4 contains tabulations of population and housing data collected from a sample of the population. The data are shown down to the census tract level for 336 race, Hispanic or Latino, American Indian and Alaska Native, and ancestry categories.
[SF 4 Thresholds](#)

On the right side of the SF 3 section, there is a box titled "Select from the following:" with the following links:

- [Detailed Tables](#)
- [Geographic Comparison Tables](#)
- [Quick Tables](#)
- [Thematic Maps](#)
- [Reference Maps](#)
- [Custom Table](#)
- [Enter a table number](#)
- [List all tables](#)
- [List all maps](#)
- [About this data set](#)
- [Technical Documentation \(PDF\)](#)

→ Click on "Census 2000 File 3"

→ Click on "Detailed Tables"

Step3. Geography

This brings you to the interface where you specify your region of study. To recreate our **Persons with Disabilities** map, we will use the geography of “Block Groups” for the entire Planning District 10 region.

American FactFinder - Windows Internet Explorer

http://factfinder.census.gov/servlet/DTGeoSearchByRelationshipServlet?_ts=183639319423

U.S. Census Bureau
American FactFinder

Main Search Feedback FAQs Glossary Site Map Help

Select Geography

You are here: [Main](#) > [Data Sets](#) > [Data Sets with Detailed Tables](#) > [Geography](#) > [Tables](#) > [Results](#)
Census 2000 Summary File 3 (SF 3) - Sample Data, Detailed Tables

Choose a selection method

list name search address search map **geo within geo**

Note: Using geo within geo takes time when working with large numbers of geographies. The current limit on the number of geographies for a geo within geo combination is 7000. [Explain Census Geography](#)

Show me all
..... Block Groups

Within
County

Select a state
Virginia

Select a county
Albemarle County

Select one or more geographic areas and click 'Add'

All Block Groups
Block Group 1, Census Tract 101, Albemarle County, Virginia
Block Group 2, Census Tract 101, Albemarle County, Virginia
Block Group 3, Census Tract 101, Albemarle County, Virginia
Block Group 1, Census Tract 102, Albemarle County, Virginia
Block Group 2, Census Tract 102, Albemarle County, Virginia
Block Group 3, Census Tract 102, Albemarle County, Virginia
Block Group 4, Census Tract 102, Albemarle County, Virginia

Map It

Add

Current geography selections:

==== Block Group =====
Block Group 1, Census Tract 101, Albemarle County, Virginia
Block Group 2, Census Tract 101, Albemarle County, Virginia
Block Group 3, Census Tract 101, Albemarle County, Virginia
Block Group 1, Census Tract 102, Albemarle County, Virginia
Block Group 2, Census Tract 102, Albemarle County, Virginia
Block Group 3, Census Tract 102, Albemarle County, Virginia
Block Group 4, Census Tract 102, Albemarle County, Virginia

Download data for more than 7,000 geographic areas using the [Download Center](#).

Remove

Next

- First click on the tab “geo within geo” to begin easily specifying which block groups make up the study area.
- Next specify the following in each drop down menu:
 - Show me all: “Block Groups”
 - Within: “County”
 - Select a State: “Virginia”
 - Select a County: “Albemarle” (or use your county/city)
 - Select one or more of the geographical areas and click “add”. For this exercise select “All Block Groups” as our geographical areas of interest.
- Repeat Step 3. for each locality in your study area until all Block Groups have been added.
- Click “Next”

Step 4: Selecting Tables

The screenshot shows the American FactFinder website in Internet Explorer. The browser address bar shows the URL: http://factfinder.census.gov/servlet/DTSUBJECTSHOWTABLESServlet?_ts=183639990157. The page title is "U.S. Census Bureau American FactFinder". The breadcrumb trail is: "You are here: Main > Data Sets > Data Sets with Detailed Tables > Geography > Tables > Results". The current page is "Census 2000 Summary File 3 (SF 3) - Sample Data, Detailed Tables".

There are three buttons for table selection: "by subject", "by keyword", and "show all tables". A list of tables is displayed, with "P41. Age by Types of Disability for the Civilian Noninstitutionalized Population 5+ Years with Disabilities" selected. To the right of the list are abbreviations: Black - Black or African American, AIAN - American Indian and Alaska Native, NHPI - Native Hawaiian and Other Pacific Islander, and SOR - Some Other Race.

Below the list is an "Add" button. Below the "Add" button is a section for "Current table selections" containing the selected table P41, with "Remove" and "Show Result" buttons.

Clicking “Next” should bring up a page like the one above. Now scroll through the tables listed.

Once you understand the process of collecting, analyzing and mapping data, this step (selecting tables) is where we can find other data to create maps with a different theme than Persons with Disabilities. Take a moment to scroll through the tables to get an idea of what data is available for download.

Alternatively, the Summary File 3 (SF3) pdf file on the THA Toolkit CD is also a resource for what data is available for download from the US Census.

For the **Persons with Disabilities** map we want to add table P41. “Age by Types of Disability for the Civilian Non-institutionalized Population 5+ Years with Disabilities.”

→ Click “Show Results”

Detailed Tables - American FactFinder - Windows Internet Explorer

http://factfinder.census.gov/servlet/DTTable?_bm=d&-geo_id=15000U5510030101001&-geo_id=15000U5510030101002&-geo_id=15000

U.S. Census Bureau
American FactFinder

Main Search Feedback FAQs Glossary Site Map Help

Detailed Tables

You are here: [Main](#) > [Data Sets](#) > [Data Sets with Detailed Tables](#) > [Geography](#) > [Tables](#) > [Results](#)

Use the links above to change your results | [Options](#) | [Print / Download](#) | [Related Items](#)

Note: use download to retrieve all selected tables and geographies

[P41. AGE BY TYPES OF DISABILITY FOR THE CIVILIAN NONINSTITUTIONALIZED POPULATION 5 YEARS AND OVER WITH DISABILITIES \[19\] - Universe: Total disabilities tallied for the civilian noninstitutionalized population 5 years and over with disabilities](#)
Data Set: [Census 2000 Summary File 3 \(SF 3\) - Sample Data](#)

geographies 1-10 of 145 [Next](#)

NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see <http://factfinder.census.gov/home/en/datanotes/expsf3.htm>.

	Block Group 1, Census Tract 101, Albemarle County, Virginia	Block Group 2, Census Tract 101, Albemarle County, Virginia	Block Group 3, Census Tract 101, Albemarle County, Virginia	Block Group 1, Census Tract 102, Albemarle County, Virginia	Block Group 2, Census Tract 102, Albemarle County, Virginia
Total disabilities tallied:	448	369	269	330	153
Total disabilities tallied for people 5 to 15 years:	24	0	11	32	6
Sensory disability	12	0	7	7	0
Physical disability	0	0	0	11	0
Mental disability	12	0	4	14	6
Self-care disability	0	0	0	0	0
Total disabilities tallied for people 16 to 64 years:	345	249	140	261	119
Sensory disability	21	14	0	16	12
Physical disability	82	49	27	83	22
Mental disability	33	50	16	16	7
Self-care disability	11	31	0	5	0
Go-outside-home disability	69	36	9	6	8
Employment disability	129	69	88	135	70
Total disabilities tallied for people 65 years and over:	79	120	118	37	28
Sensory disability	9	17	18	7	7
Physical disability	31	48	43	16	7
Mental disability	5	11	15	0	0
Self-care disability	0	15	11	7	7
Go-outside-home disability	34	29	31	7	7

U.S. Census Bureau
Census 2000

A lot of data was just collected and should now be displayed. For the Planning District 10 region, the data results show one table with 145 pages, which are viewed by clicking “next.” No worries! We don’t need to see it all right now. The magic of GIS will organize this for us. We are just going to simply download the data as zipped (compressed) files.

4a. Optional Step – Save Our Work Up To This Point

We can make life easier for future maps we want to create. Find the Print/Download option on the menu bar.

- Select “save query” and name this “disability.”
- Save it in the folder on the desktop.

What we just did was save our work up to this point. Next time you want to come to the U.S. Census site, you can quickly get to this page, go to the Print/Download menu and “load query.” You will immediately be back at this point, with all Block Groups for this study area and the data for Table

P41. Then you can just select “Tables” at the top of the page to select another table of information for the same geographic area.

→ If this confuses you at this point, forget this optional step. Move on. Let’s download the data!

→

Step 5. Download the Data

→ Find the Print/Download menu toward the top of the page:

Detailed Tables
 You are here: [Main](#) > [Data Sets](#) > [Data Sets with Detailed Tables](#) > [Geography](#) > [Tables](#) > [Results](#)

Use the links above to change your results | **Options** | **Print / Download** | **Related Items**

Note: use download to retrieve all selected tables and geographies

[P76 FAMILY INCOME IN 1999 \[17\] - Universe: Families](#)
 Data Set: [Census 2000 Summary File 3 \(SF 3\) - Sample Data](#)

geographies 1-10 of 145 [Next](#)

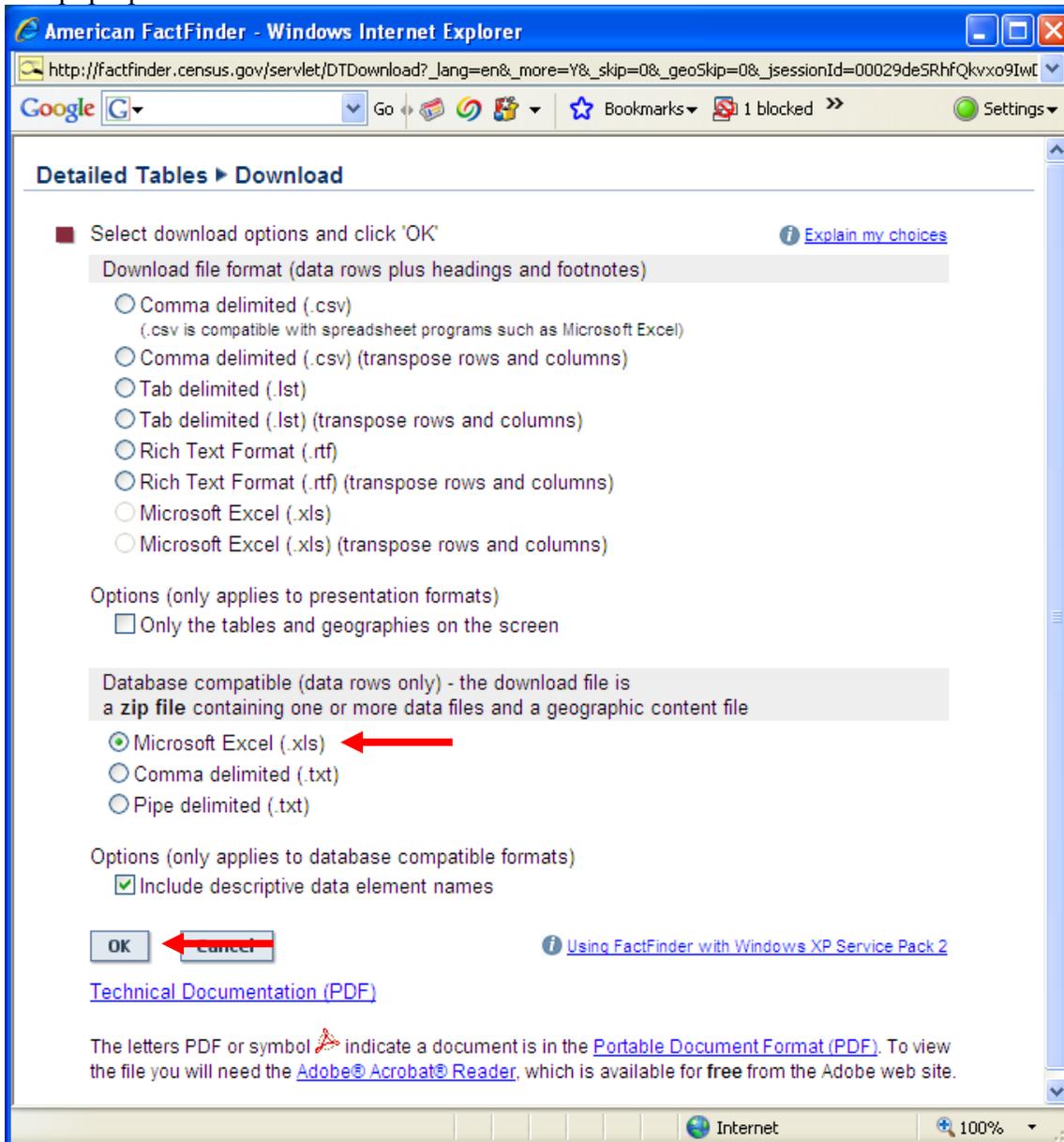
NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see <http://factfinder.census.gov/home/en/datanotes/expsf3.htm>.

	Block Group 1, Census Tract 101, Albemarle County, Virginia	Block Group 2, Census Tract 101, Albemarle County, Virginia	Block Group 3, Census Tract 101, Albemarle County, Virginia	Block Group 1, Census Tract 102, Albemarle County, Virginia	Block Group 2, Census Tract 102, Albemarle County, Virginia	Block Group Census Tract Albemarle Co Virginia
Total:	508	337	420	695	447	
Less than \$10,000	24	26	7	0	10	
\$10,000 to \$14,999	27	11	12	0	0	
\$15,000 to \$19,999	30	5	8	0	7	
\$20,000 to \$24,999	25	14	6	19	0	
\$25,000 to \$29,999	27	23	17	24	15	
\$30,000 to \$34,999	18	27	11	34	0	
\$35,000 to \$39,999	7	24	35	0	20	
\$40,000 to \$44,999	17	31	6	45	18	
\$45,000 to \$49,999	23	39	16	29	32	
\$50,000 to \$59,999	54	39	42	81	38	
\$60,000 to \$74,999	78	31	29	183	49	
\$75,000 to \$99,999	77	42	43	159	90	
\$100,000 to \$124,999	23	6	41	55	52	
\$125,000 to \$149,999	30	0	35	7	58	
\$150,000 to \$199,999	12	12	35	45	37	
\$200,000 or more	36	7	77	14	21	

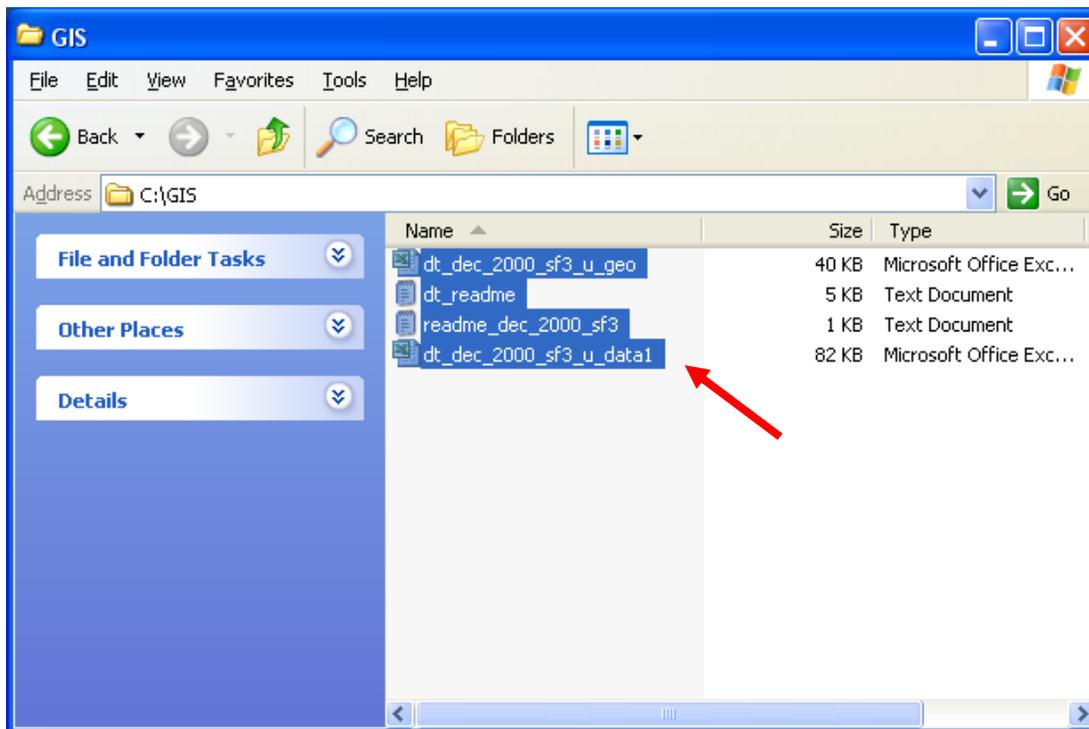
U.S. Census Bureau
 Census 2000

→ Click on “Download” and a window should pop up.

The pop-up window should look similar to this:



- Select Microsoft Excel (.xls) and click “OK”
- Another window will pop up, asking if you would like to open, save or cancel.
- Click “Save” and browse to a preferred folder. You can choose to rename the zipped file or not.
- Browse to the folder in which you saved the zipped file. Right click the zipped file and choose “Extract All...” and extract the zipped files to a preferred folder.
- In the final window of the Extraction Wizard, windows will ask if you would like to open the new folder when the process is finished. This is a radio button located within the final Extraction Wizard dialogue box. Leave it checked and click finish. This will open the folder, which has 4 files:



- The largest excel file contains the data we want.
- Check and make sure all the data was downloaded.

	A	B	C	D	E
1	GEO_ID	GEO_ID2	SUMLEVEL	GEO_NAME	P076001
2	Geography Identifier	Geography Identifier	Geographic Summary Level	Geography	Families: Total
3	1	510030101001	150	Tract 101, Albemarle	508
4	2	510030101002	150	Tract 101, Albemarle	337
5	3	510030101003	150	Tract 101, Albemarle	420
6	1	510030102001	150	Tract 102, Albemarle	695
7	2	510030102002	150	Tract 102, Albemarle	447
8	3	510030102003	150	Tract 102, Albemarle	541
9	4	510030102004	150	Tract 102, Albemarle	435
10	1	510030103001	150	Tract 103, Albemarle	838
11	2	510030103002	150	Tract 103, Albemarle	805
12	3	510030103003	150	Tract 103, Albemarle	207
13	1	510030104001	150	Tract 104, Albemarle	450
14	2	510030104002	150	Tract 104, Albemarle	296

The process you just went through is the basic process for collecting data from the census website for any *table* or *level of geography*.

After you have saved the excel file in your folder on the desktop, you've completed **Collecting Data**. Congrats! Onward!

Collecting and Digitizing Data

Collecting and Digitizing Data

One effective way to identify the particular needs of your community is to use a GIS map overlaid with key areas of concern within in neighborhood or small study area. A walking tour can provide the data needed to assess and record existing conditions, barriers or obstacles, how buildings relate to the street, and other data that can be represented on a GIS map.

This section provides an overview of the walking tour and recording process for pedestrian accessibility in a the Belmont neighborhood of Charlottesville, Virginia, as well as a map providing some suggested symbols that can be used as a legend. The section also includes RoadWork sheets and audit forms for data collection. Many of the tools provided can be applied for a wide variety of observations and analyses of neighborhoods or study areas.

I. Basic Concept

Digitizing is the process of manually tracing or drawing features onto a GIS map. The easiest method is to use a photo as a base and then trace around buildings and along roads.

Digitizing is also useful for defining features that may not yet exist, such as boundaries around study areas.

In the Belmont Map associated with this protocol the study area was digitized over a planimetric layer and then clipped, so that the map was confined to this one neighborhood of interest. Data were collected through fieldwork to complete the digitization. After walking the Belmont Neighborhood and taking note of pre-defined obstacles within the pedestrian network, these obstacles were digitized and assigned a number according to the degree to which they impede pedestrians.

The Belmont Study Area Map inventoried hindrances within the pedestrian network for the north Belmont neighborhood in Charlottesville, Virginia. The base map on which obstacles were recorded was comprised of planimetrics, which are files created by outlining features on an aerial photo of the area (houses, streets, sidewalks, etc.). Planimetric files for the Belmont map were readily available from the City of Charlottesville and the Thomas Jefferson Planning District.

In order to inventory hindrances, the team first created a list of possible obstacles and features. The team ranked these by criteria such as the adequacy of sidewalks and curb cuts, the degree to which obstructions blocked sidewalks, and adequacy of signals and markings on crosswalks. The next step was to actually go out into the field and walk the study area with a base map in hand to physically record hindrances.

The associated protocol with the Belmont Map is a description of the process for collecting this data and then digitizing (drawing) it onto the base map in GIS. The checklist and the rating system for the obstacles this map recorded are also included in the section. This is one example, but be creative in applying this technique. This list of items for possible inventory can be expanded to include bus shelters, streetlights, street trees, and many more features important to the overall success of livable neighborhoods and communities.

II. Process

The process of collecting and digitizing data requires four basic steps:

1. Establish a Planimetric Baselayer

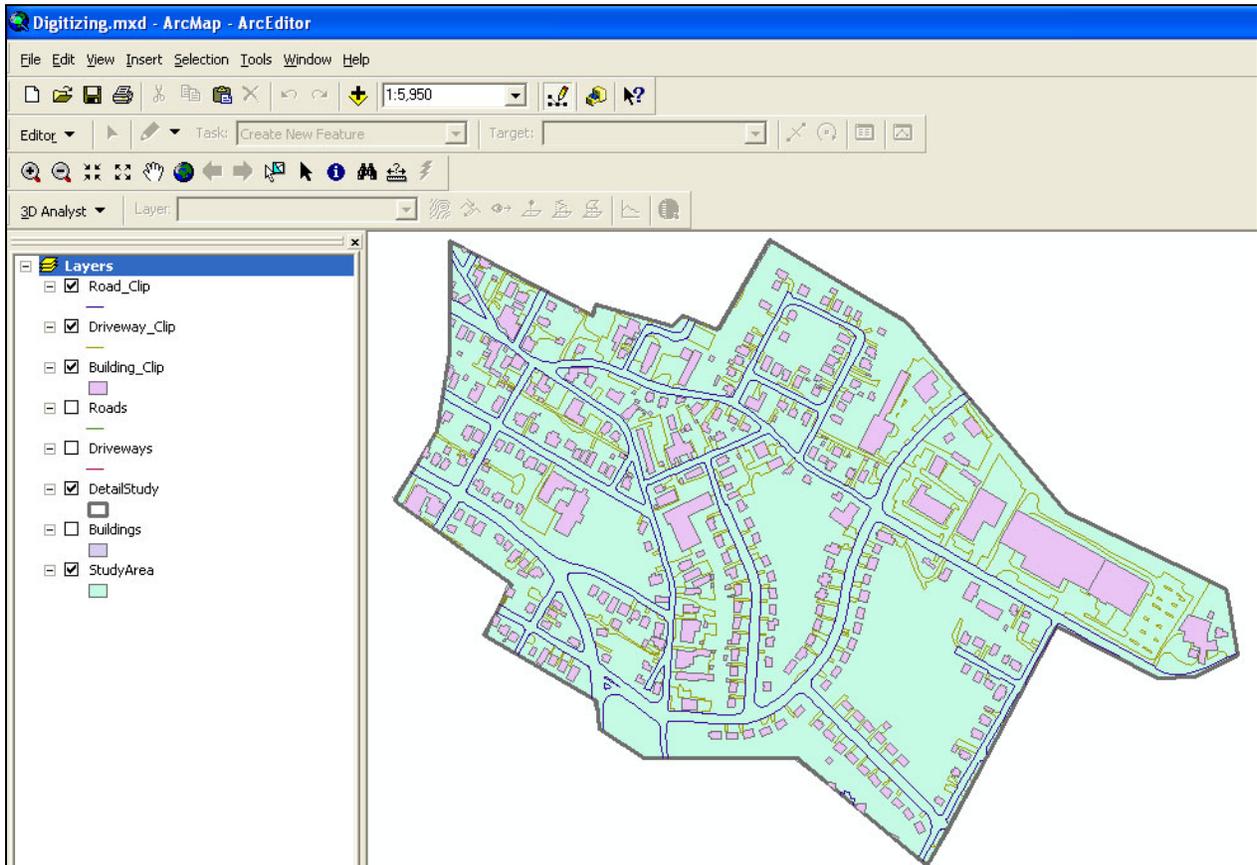
Obtain shapefiles for Buildings, Road Edges, Sidewalks, Driveways, or any other helpful background features, and add these as layers onto a map to create a baselayer. These standard shapefiles will usually be available from the local government or Planning District.

2. Digitize and Clip a Study Area

Create a new shapefile to represent your study area. Remember to select the appropriate coordinate system, typically NAD 1983 StatePlane Virginia South, before creating the file in ArcCatalog.

Using the pencil tool on the editor toolbar, draw the boundaries around the area you are interested in assessing. Make sure the boundary includes both sides of any streets on the edge of the study area.

You may want to clip all of the Planimetric baselayers according to the new study area.



3. Collect Data with Fieldwork

Print out a rough map that can be used while making notes out in the field. For the Belmont Neighborhood study area, the intent was to inventory obstacles and barriers within the pedestrian network. While performing fieldwork, it is important at the same time to record, according to a predetermined scale, a score associated with each obstacle.

On the following page is the matrix that the team used with this exercise. Refer also to the neighborhood audit forms included at the end of this section for other ideas for assessment metrics.

Scoring

Sidewalks

0: No sidewalks
1: Lack of curb or other buffers. Dilapidated, uneven, not continuous.
2: Lack of buffer – only raised curb. Dilapidated and uneven. No curb-cuts. Narrow.
3: Small buffer and raised curb. Presence of obstacles – still passable. Starts w/curb cut, dead ends (?)
4: Sufficient buffer and curb. Smoothness, connectivity, width. Leads to curb cuts.

Walking In Street:

Obstacles

T = Telephone pole H= Fire Hydrant O= Obstructions

How a telephone pole gets rated: T ¼: Telephone pole ¼ way in sidewalk

0: Obstructs 1/2 or more of sidewalk
1: Obstructs 1/3 of sidewalk
2: Obstructs 1/4 of sidewalk
3: Does not obstruct sidewalk

“Driveside: where driveways and sidewalks meet

1 - Gradual – slopes angled toward the street
2 - Slope – down into driveway, but not angled toward street
3 - Level – sidewalk stays level across driveway

Crosswalks

0: No marked crosswalk
1: No signal, no curb-cut
2: Signal, no curb-cut
3: Signal, curb-cut not lined up w/cross walk
4: Signal, midway wait point if necessary, link to curb-cut

Curb-cuts at corners

0: No curb-cuts
1: Curb cut not lined up with cross walk, no texture, curb-like transition, obstruction in way
2: Curb cuts with neither texture nor successful transition to cross walk
3: Curb cuts with no texture or poor transition to cross walk
4: Curb cuts with texture, smooth transition to cross walk

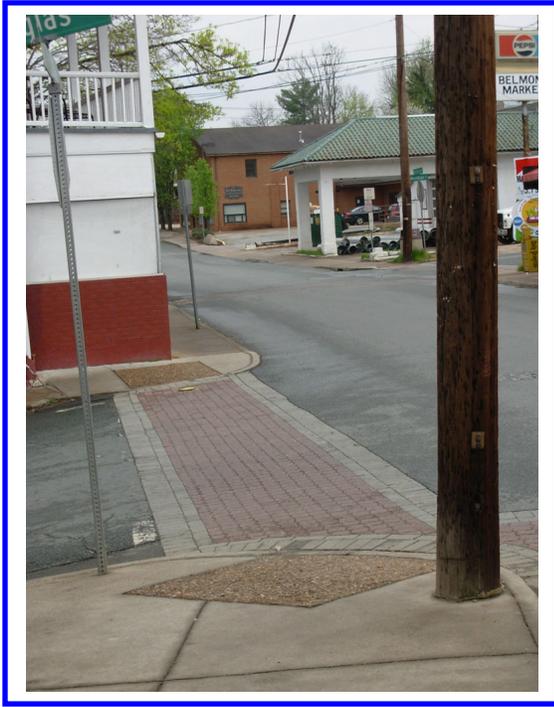
Transit Stops

1: Lacks shelter, lacks bench or sidewalk for waiting
2: Lacks shelter, bench, no setback
3: Lacks shelter, bench, has setback
4: Shelter, bench, protection from traffic

Access to buildings

Number of steps up to house/front porch ---impedance per step

Examples of what the team inventoried:



Above: Curb cuts with good transition and texture. Well marked cross walks.

Below: Bus stops with clear signage, but no shelter or protection from the street.



Below: Sidewalk obstructions.



Left: poor transition between sidewalk and driveways.



Right: Poorly marked crosswalks without signals.

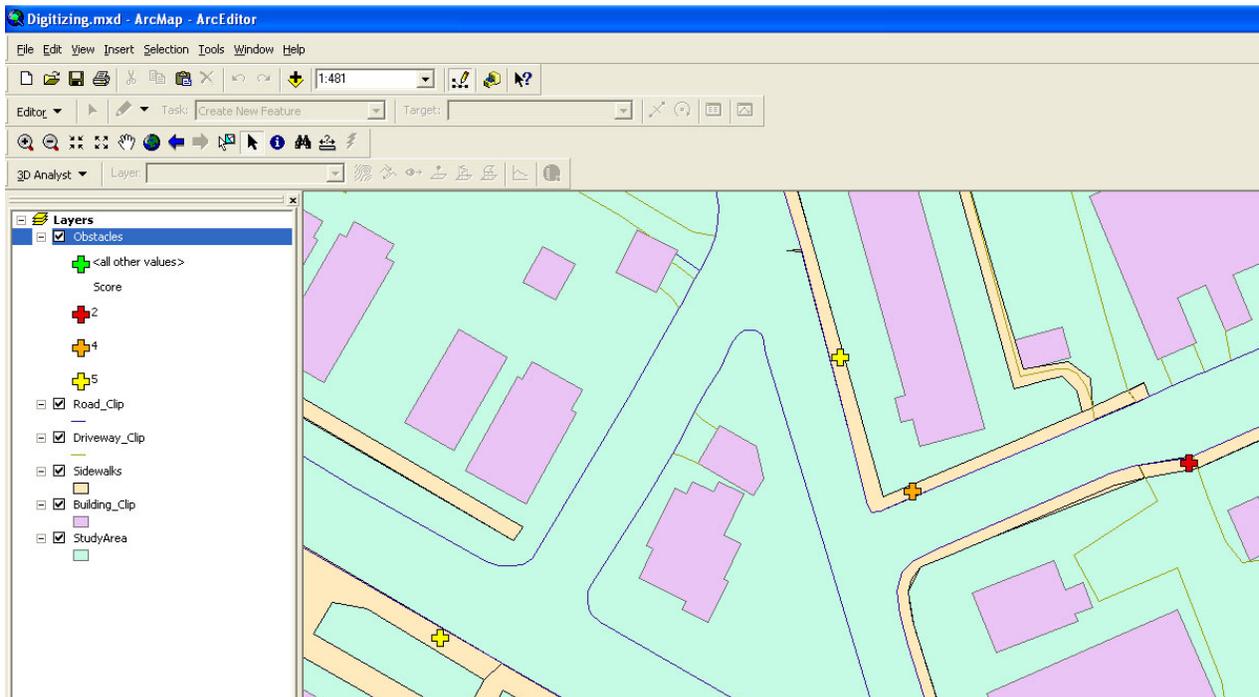


4. Digitize Fieldwork Data

Create new point shapefiles for each of the different categories you wish to represent on the map. For the Belmont Study, the category of “obstacles” was chosen to identify objects such as fire hydrants that obstruct pedestrian movement. Create a new field in the features attribute table called “score,” and input the data collected from the framework.

Using the symbology of the feature, set a different color for each unique value of the “score” field. As you create more shapefiles and repeat this process, use different symbols to differentiate between elements of the assessment (crosswalks, transit stops, curb cuts).

Now you have a map identifying all of the observations collected from the field. This can be used for a visualization of the needs within the study area, or it can be incorporated into further GIS analysis.

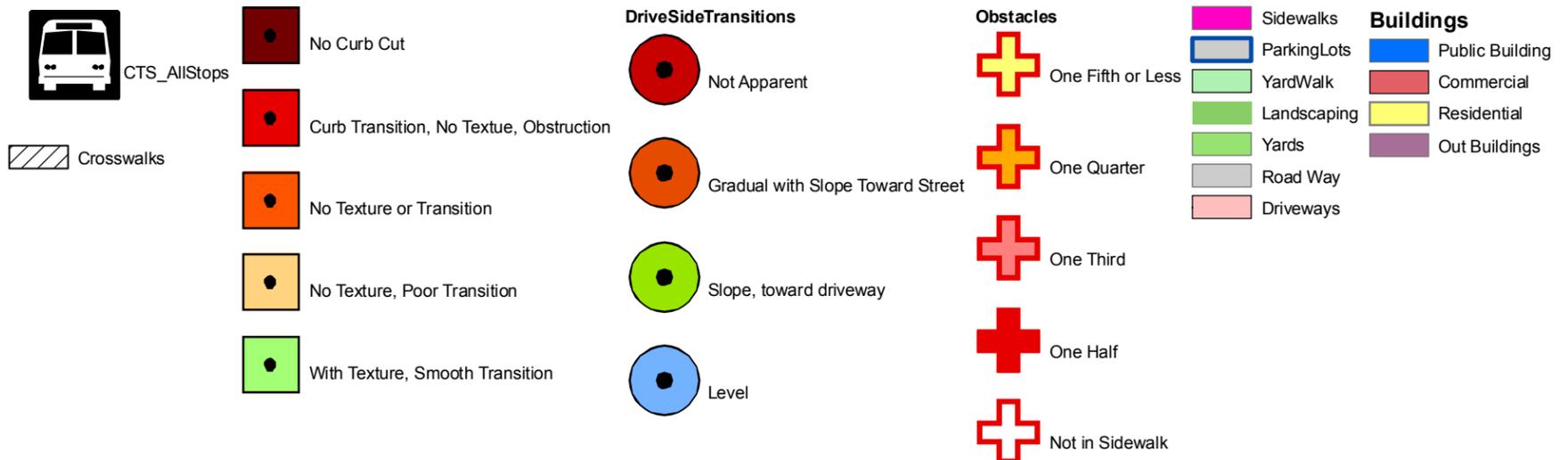


Accessibility for Pedestrians and Persons with Disabilities in Belmont Neighborhood: Base Map of Pedestrian Facilities

Prepared by Students in PLAC 513 GIS in Planning
Spring 2006 in Cooperation with the
Thomas Jefferson Planning District Commission



Symbols



Elements of the Pedestrian System were identified first from CAD planimetric files (2000) and verified by recent air photography (2002) and field observations (March/April 2006).

The Number in each building indicates the number of vertical steps needed to get to an entrance of the building. This does not include the threshold.

RoadWork – The Citizen Planner

Citizens can learn to be planners – influencing how their communities work and grow. Average citizens, elected officials, public servants, and business leaders can learn to:

- Identify what makes a healthy neighborhood.
- Apply time-tested principles of place making.
- Work together to make their communities more livable.

RoadWork exercises at the end of each chapter are useful tools to assess present conditions in your community and stimulate thinking about future possibilities. In the process, you'll experience different kinds of places, and find out how they make you feel and behave. You'll also learn how to measure streets and sidewalks, count traffic, explore your neighborhood, and get a jump-start on how to make your community work better.

Hint: Get a notebook for your RoadWork exercises. Begin with these important questions. Write the answers down. Read them later and think about what you have found and seen. Talk about it with your family, friends and neighbors.

- Where do you live?** What kind of neighborhood is it? Is it a place where you plan to stay, or do you feel like you are just passing through? How many of your neighbors have family living nearby? Does your neighborhood make that possible?
- What kind of problems** do you see around you? Which ones look like good opportunities to tackle first? What do you want to change about your neighborhood or community? What do you want to protect?
- What do you care about** – passionately? Social causes, the environment, children, pedestrian safety, local business, jobs, historic preservation, or politics? All the above?
- What work do you do?** Any connections with issues you care about? Is your business, church, or school expanding? Are you on a board or a member of an organization that is planning a building project?
- What kind of investment** are you willing to make? Time, reputation, faith, the family dinner hour, the monthly book group? Are you in it for the long haul?
- Who do you know** – in your neighborhood, at work, in community activities – that might be interested in these same issues? Can you go through the book and RoadWork together?
- What kind of future** do you want for your children? Your community?
- If you are a public servant**, how do these questions relate to your job? Is it fair to ask you to make decisions as if your own family was going to cross the street you designed, live in the community you approved plans for, live across from the public facility you financed? Would that perspective change how you approach your job?

RoadWork – Center & Edge

Healthy neighborhoods are the key building blocks to making livable communities. Neighborhoods that work well have:

A center – or focal point for community activities.

Edges – or geographic and cultural boundaries.

A wide mix of uses (residential, commercial and retail, recreation, schools, civic and cultural) and building types that can change use over time.

A well-connected network of safe streets and transportation choices.

Places to gather – to play, to interact, to rest and reflect, and to connect to natural systems.

To help you understand better where your neighborhood's center and edges are, complete the following RoadWork. Even if you belong to a well-defined association, exploring these ideas can help you protect what you have, and to figure out how – and where – growth might be appropriate.

Hint: You don't have to do it all at once! Follow your own pace. Do RoadWork while you are shopping, chauffeuring, walking the dog, or visiting neighbors. Or take a couple of hours with a friend and get going.

- Start where you live.** How do you use your neighborhood? What activities occur nearby? Where do you live, work, worship, and shop? Where can you get a cup of coffee or a paper? Where do you play and exercise? Where do your kids go to school?
- Identify the edges of your neighborhood.** The physical edges are easiest – a river, a waterfront, a hill or valley. Highway projects often cut through historic neighborhoods, becoming the new boundaries. A shopping center, school, or office park can serve as a neighborhood edge. A commercial boulevard can be a 'hard edge' for several neighborhoods.
- Find the centers or 'hearts'.** Where do people gather? Centers can be public or private, formal or informal. One neighborhood might have several, for different functions: a park or community center, a school, a small retail district, a church or synagogue, a garage, even a beauty parlor or lunch counter.
- Define your neighborhood.** Does it have a name – or several? Maps, residents, and businesses might use a different name for the same place. Who lives here? What is the social makeup? Do varying cultures or age groups use the neighborhood in different ways? Interview other folks. Find people who live near the edges; different ages, church or culture. How do they see the place?
- Identify specific features of your neighborhood. Where are the public places?** Don't worry about who owns them yet. Just think about where people gather. Where do the kids hang out? Where do seniors spend their days? Where are the natural features? Identify bodies of water, rivers, wooded areas, or linear parks. Where are the walls and fences? Do they delineate public, semi-public, and private space? Are they welcoming gateways? Are they 'false security' walls, trying to keep people out?
- Assess your neighborhood's potential.** Where are the opportunities? Where should activity increase? Is there vacant or under-used land – especially in the 'center' or near activity areas? Any proposed or pending projects? Did you find historic gathering places that could use some attention? Are they on or near a potential transit route? What places need protection? Where are there threats to historic buildings, great streets, natural areas, and local businesses?

What do you want your neighborhood to be when it grows up? Summarize in a few sentences.

RoadWork – The Building, the Block, the Street

Buildings and streets affect the way people who use them feel and act. Key factors include the way the building ‘relates to the street’ – where it sits on the lot, where the entry is, where parking is located, and how it fits with other buildings. Safety and social interaction can be increased by maintaining active “eyes on the street” – windows and doors that face onto the street or parks – instead of blank walls.

Groups of buildings and streets – blocks – add up to making great places – or awful ones. Learn to tell the difference, and figure out what works in your own neighborhood. Look for buildings and streets with *Good Bones*, traditional places that work, that have active corners. Compare them to over-widened Main Streets, sterile commercial districts, unsafe neighborhood streets, and poorly planned modern buildings.

To learn more about your block, complete these RoadWork activities.

Hint: Walk, then drive through the same places in your neighborhood. Notice differences in how you feel and act when in a car or on foot.

- Start where you live.** Walk outside your own home or apartment. How does the building relate to the street? How far is it set back? Is that space usable? What about the area between buildings?
- Sit on your front porch.** If you don’t have a porch, use your front steps, building entry, or garage door. How far are you from the sidewalk or street? Is anyone walking by? Are they close enough (and relaxed enough) to speak to? Is your front porch big enough to gather a group in conversation?
- Check out your entrance.** Is your front yard/entry clearly ‘marked’ as belonging to you? If an apartment or condo, does each unit have an individual ‘semi-private’ entry or yard?
- Walk around the block.** How do the other buildings compare – in all the above ways? Do you feel out of place walking, or is it typical behavior in your neighborhood? What part do the buildings play in that? Can you think of ways to improve your block? What’s missing? Are there good examples?
- Look at how the buildings are used.** Are the buildings single-family homes, apartment buildings, or a housing project? Are surrounding blocks the same? Are nearby buildings used for commercial, retail, schools, and recreation? How many can you walk to? What’s missing that you need every day?
- Look at ‘life in the street.’** Does the mix of uses – businesses and homes – add to the activity level? Do people come to your neighborhood for one reason and stay for another? Do they shop and eat lunch, or walk around while getting their tires fixed or their teeth cleaned? Do people walk through your block to get somewhere else? Do your neighbors visit with each other in the street?
- Make a ‘safety inspection.’** How safe does it feel? What about those ‘eyes on the street’ – the windows and doors? Can you see the street from your living room or office? Do you sit, work, play, or hang out in your front yard? If you walk in the neighborhood, can people see you from their buildings? Are there plenty of windows in the front? Are the entries in front? Are there apartments above the commercial buildings to keep an eye on the street at night? Is lighting adequate? Can the parks be ‘supervised’ by residents in nearby houses, or by people walking and driving by?
- Take a field trip to a place that’s different from your neighborhood.** Look at these same questions – and compare it to your own neighborhood. If you live in a newer suburban single-family development, find an older downtown neighborhood with similar-size houses. If you shop at a suburban mall, try walking or taking the bus there – or just walk between stores. Visit a downtown shopping district or historic neighborhood. Look at a different type of neighborhood school.
- How do the buildings and sites fit into the neighborhood’s potential?** Do you see room for improvement on specific buildings? Is there a good example you can use?

RoadWork – Taking Back the Streets

People passing through a neighborhood should have more rights than the folks who live there – or so it may seem from the way most roadway planning has been done in the past. What do you think? Traffic-related issues are one of the major reasons people get involved in neighborhood planning.

Thoughtful street design combines traffic calming, increased mobility, beautification, and natural systems reconnection. Making streets work for both people and cars is critical to recreating livable neighborhoods.

To identify how your streets are working, complete these RoadWork activities.

Safety Hint: Measuring streets and watching cars behave can be dangerous. Never do it alone. Watch out for traffic and each other. Wear bright clothes. You don't have to use a measuring tape. Learn how long your average 'pace' is. Pace off a measured distance a few times and average it out. Remember, you're just comparing streets relative to each other. For more accuracy, buy a rolling measuring wheel (available at surveyors' supply stores) and share it with other groups.

- Start where you live. What kind of street do you live on?** What works well? What doesn't? Who uses it? Is there a balance between auto, pedestrian, and bike traffic?
- Take a street inventory.** How wide is your street? How long? How many lanes? Where does the street go? Is there a 'connected grid' – or do all roads from your neighborhood feed into one collector street? Are there sidewalks? Are they set back from the road? Are there street trees, to shade and protect pedestrians? Is there on street parking? Does the parking help to slow speeding traffic?
- Look for meeting places.** Do you meet your neighbors out walking, on their way somewhere? Are there spontaneous conversations or athletic games? Are there places where the street and buildings work to make 'outdoor rooms?' What are the details of these areas, and what do you like about them?
- Streets are for people, too.** Can you walk and cross the streets safely in your neighborhood? Is there anywhere to go? Are there problem intersections? How many lanes do you have to cross? Are there marked crosswalks? Are there medians to stop on? How long does it take you to cross? How much longer for children or older folks?
- Gather traffic information.** Are the problems caused by traffic quantity (volume), or driver behavior? Do drivers speed more when there is less traffic? Are the speeders strangers, or you and your neighbors?
- Drivers have choices.** How do drivers behave? Are there streets where they go faster, or signals that are ignored? Are there any streets that compel drivers to behave – by their geometry, width, length – or simply their beauty? What about yourself? Drive through the streets you have just assessed on foot. What makes you go faster or slower? Are there streets that are so pleasant to drive on that you don't worry about how long the trip takes? What's different about the design of those streets?
- Time your next few trips.** How much time do you really save by trying to go 10 mph faster between lights? Try other speeds within the limit. Do you save more than a minute? Is going fast worth it – knowing you might be five or ten times more likely to kill someone if you hit them?
- Assess the potential for safer streets.** Have any devices been installed nearby to calm traffic: speed tables, crosswalks, roundabouts, medians, curb extensions, or pedestrian islands? Have you found historic examples? Look for other kinds of streets. Apply these questions to streets near work, the mall, the downtown district, and other neighborhoods. What kinds of changes need to be made?
- How do you want your neighborhood streets to look and work?**

NEIGHBORHOOD AUDIT FORM

Name of Observer _____

Neighborhood _____

Date/Time of Audit _____

Where do you live? _____

Age: 1-10 11-15 16-20 21-40 41-65 65+

Are you a: Pedestrian Bicyclist Motorist Resident Business Owner/Employee

For the list below, circle the number that best describes the conditions in your neighborhood:

	Not a Problem>>>Serious Problem				
Motorist courtesy toward pedestrians	1	2	3	4	5
Traffic safety for children and elderly	1	2	3	4	5
Number of cars	1	2	3	4	5
Speeding	1	2	3	4	5
Motorists obey stop signs	1	2	3	4	5
On-street parking available	1	2	3	4	5
Pedestrians can cross streets easily	1	2	3	4	5
Traffic noise	1	2	3	4	5
Visibility of pedestrians	1	2	3	4	5
Quality of pedestrian experience	1	2	3	4	5
Other: _____	1	2	3	4	5
Other: _____	1	2	3	4	5

Please use the space here or on a separate sheet to describe specific problems in your neighborhood and the locations where they occur:

STREET INVENTORY FORM

Name of Observer _____

Neighborhood _____

Date/Time of Audit _____

Street/Cross Street _____

Please circle or write your responses:

Roadway Type Commercial Residential

Number of Lanes One Two Three Four Five

Block Length (feet) 200-300 301-400 401-500 501-800 Over 800

On-Street Parking None Light Moderate Heavy Saturated

Walkway/Sidewalk None One Side Both Intermittent

Walkway Width (feet): _____ _____ _____

Type of Walkway Grass Asphalt Concrete

Traffic Volume
(vehicles/hour): _____ _____ _____

Average Speed
(miles/hour): 15-20 20-25 25-30 30-35 35-40 40-45 45-50 50+

If possible, please draw the street section below. Indicate dimensions in feet for each element you draw (sidewalk, bike lane, roadway):

Economic Market Conditions

Economic Market Conditions

Online Resources:

The following are online resources that provide information on several different topics. The major focus of these websites is on economic market conditions and employment. While the THA Toolkit is intended to address the needs of people with disabilities, and others commonly left out of the planning process, these resources are helpful for many different types of projects and initiatives.

The following online resources include: OnTheMap (page 1), HotReport (page 5), Industry Focus (page 9), and Quarterly Workforce Indicators Online (page 11).

OnTheMap

The Census Bureau's OnTheMap program is potentially the most powerful analytical tool in the THA Toolkit. It allows a user to produce custom maps and detailed reports on specified geographies, highlighting the relationship between an area's employment and residential centers. These reports are useful for conducting transportation projects, such as establishing potential transit routes or roadway improvements. OnTheMap will also be helpful with planning housing and economic development projects.

OnTheMap allows the user to produce reports on either the Commuter Shed (i.e. the locations of origin and characteristics of workers that commute to a user-defined employment destination area) or a Labor Shed (i.e. the characteristics of people living in a user-defined residential area and a profile of the locations where these residents work). Drawing on a database built at the federal level among the current 46 participating states, this database has the advantage of summarizing post-census trends in inter-state commuting patterns and labor force characteristics.

User Instructions:

The U.S. Census Bureau maintains the following website, which provides an overview of OnTheMap, along with guidance, sample analysis and instruction on how to use this tool. It is suggested that you begin with this website, to become familiar with how this program works and its best uses. This page also has a link to the main website, where you begin working with OnTheMap. <http://lehd.did.census.gov/led/datatools/onthemap3.html>



The website for OnTheMap is <http://lehdmap3.did.census.gov/>, which provides the following view, *seen below*. There are two options for viewing a selected community. The first involves entering the community in the area labeled ‘Place Name’. The second is by clicking on the main map, displayed on the website. There is further guidance with OnTheMap on the right side of the screen. These links provide instructions and tutorials, showing how to get started with the program.



The Role of OnTheMap

The OnTheMap is a web-based mapping and reporting application that shows where people work and workers live, with companion reports on their age, earnings, industry distributions and local workforce indicators. There are two ways of viewing data with this program. As is apparent with the name, OnTheMap’s main function is mapping. It allows you to graphically depict areas, identifying Labor and Commuter Sheds. Options allow you to add and remove layers form these maps, similar with GIS mapping. The second output for OnTheMap is a spreadsheet report. These reports provide numerical display of employment and commuting data for the locality, which is consistent with the mapping results.



The map and report functions of OnTheMap provide graphic and numeric assessments of selected communities.

With this information, you can make the following community assessments:

1. **Transportation Planning:** One of the main functions of OnTheMap is to help transportation planners determine commuting patterns. This program illustrates the relationship between employment and residential centers, which is vital for determining where there is a need for infrastructure investments. This information will support informed construction and maintenance decisions on roadways and other facilities. These maps and reports may also help determine where alternative modes of transportation are feasible, which could meet the needs of those with limited mobility or without the means to drive.

Suggestion: When considering a large jurisdiction, such as a county, there are benefits to selecting subareas within the overall community. This helps assess critical places, such as commercial centers or designated growth areas, and focuses on those commuting patterns.



Labor Shed – Depicting concentrations of where people live that are employed in the selected area. The different shades of purple indicate densities of these workers, per square mile. A commuter shed map would illustrate where residents in the selected area work. Understanding both commuter and labor sheds will provide a clear understanding of a community’s commuting patterns.

2. **Land Use and Housing Planning:** OnTheMap can assist in determining the locations for new housing, by identifying areas where people can live relatively close to their jobs and employment opportunities. This can decrease travel time for residents, possibly allowing for alternative modes of transportation. OnTheMap can also help identify where employment centers can be placed in proximity to homes and potential workers. Overall, this tool can lead to more informed decisions on where homes and other uses are built.
3. **Economic Development:** By identifying the location of employment and residential centers, OnTheMap is a helpful tool for economic development projects. This analysis can assist in

attracting new businesses, by showing where there is proximity to potential employees and existing commerce. It can also help localities determine where future commercial centers would be viable, by assessing current and potential job centers.

The THA Toolkit was developed to highlight the relationship between housing and transportation. Employment is a main part of this relationship, since commuting to one's job is a frequent and vital trip for nearly everyone. OnTheMap will provide a better understanding of all three of these community components, helping localities identify gaps in these relationships and meeting the needs of all citizens.

Download the Data

OnTheMap data are now available for public download from:

<http://vrdc.ciser.cornell.edu/onthemap/doc/index.html>.

Access to the data files can be obtained by registering with virtualrdc@cornell.edu. Login procedures will be provided after registration. This link to a non-government website does not imply endorsement of any particular product, company, or content.

Users should be aware that these files can be quite large, and they require a base-line level of experience with statistical methods and handling large datasets. Maintenance releases will also be issued periodically in the future.

Users are encouraged to share their research findings and analytical insights for future versions of OnTheMap and for synthetic data development in general at this listserv:

lehd-onthemap@lists.census.gov.

Community Economic Development – HotReport

To help communities and businesses plan for economic expansions and contractions using the best available information, the Employment and Training Administration (ETA), the Economic Development Administration (EDA), the Office of Economic Adjustment (OEA) and the U.S. Census Bureau collaboratively designed the CED HotReport. This website provides community and business leaders speedy access to information tailored to economic development decision-making. The CED HotReport is a free, easy-to-use portal to instantly obtain a multi-faceted view of local and regional conditions, using graphs, maps, tables and dynamic text. Topics include the economy, transportation, housing, schools, top industries, occupations and more.

In the tradition of integrating disparate data to create new and useful products begun by the Census Bureau's Data Integration Division, the CED HotReport searches a vast online network of public databases and knits together a series of interactive web pages that incorporate calculations, maps, charts, text and tables on demand. The data are extracted each time from the source without the user having to download or store it. Information comes from a variety of sources, including the Department of Labor's Quarterly Census of Employment and Wages and State Occupational Projections.

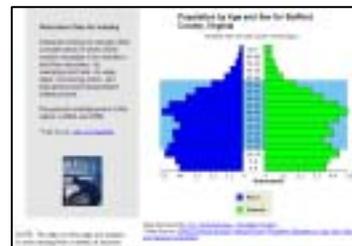
User Instructions:

The HotReport web site is located at ced.census.gov/

There is a drop-down list found on the homepage that allows the user to select any city or county for a given state. Once a community is selected, a collection of six reports will appear along the top of the website. These include an overview of the community and reports on economics, demographics, housing, transportation and community assets.



The **Overview** report contains: a state location map highlighting the boundaries of the selected county (or city), summary statistics from various federal data sources, and a population pyramid displaying recent population estimates by age and sex.



The **Economics** report allows you to view data on the growth and change of employment by industry and occupation and the growth of firms by number of employees. In the default Economics report, a statewide thematic map of local wages by industry is generated, starting with "Sector 11. Agriculture, Forestry and Fishing." Use the drop down menu to change sectors and generate a refreshed map to see which sector(s) have the highest average wages in the selected County/City.

Stafford County, Virginia

Summary Reports: Overview **Economics** Demographics Housing Transportation Community Assets

Economic Overview

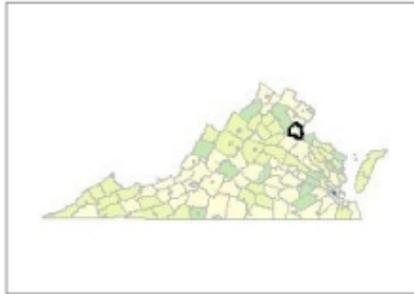
View a detailed economic report:



Map shows average annual wages for the selected industry sector. To map wages for a different industry, select an industry from the list and click the "Change Map" button.

Sector 11--Agriculture, Forestry, Fishing and Hunting

- Dollars
- 0+ -- 13599
 - 13599+ -- 27198
 - 27198+ -- 40797
 - 40797+ -- 54396
 - 54396+ -- 67995
 - 67995+ -- 81594
 - 81594+ -- 95189



Click on map to enlarge.

Data Sponsored By: [Employment and Training Administration](#)
 **Data Source: [QCEW/Industry Wages/2002](#)

The Economics report contains a ranked list of the 4-digit industrial sectors that have the highest employment in the County/City. There is a profile of the age composition of the local labor force of the County/City. There is also information on Educational Attainment Characteristics of the Population Age 25 Years and Older. The last section of the Economics report contains a profile of the top occupational groups employed in the County/City.

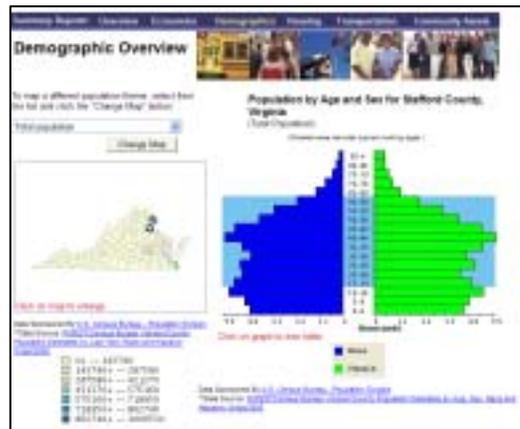
Selected Top Occupation Groups
(by Number of Employed)

Occupation Group	Stafford County, Virginia
Office and administrative support occupations	7,920
Management occupations	6,823
Sales and related occupations	6,028
Construction and extraction occupations	4,182
Education, training, and library occupations	3,766
Transportation and material moving occupations	3,421
Protective service occupations	3,397
Computer and mathematical occupations	3,356
Installation, maintenance, and repair occupations	3,065
Business and financial operations occupations	2,911

**Data Source: 2005 American Community Survey
[Information on data source, confidentiality protection, sampling error, nonsampling error, and definitions.](#)

Note: Clicking on all these graphs will reveal tabular data.

The next report in the series is the **Demographic Overview**, which contains thematic maps for racial composition, a population pyramid showing age and sex composition of the population, the household income distribution of the County/City population, and the number of persons (over age 3) enrolled in school by grade level.



The **Housing Overview** report contains three main data components, which include a map by census tract of average mortgage values for home purchases in 2003, a chart of occupancy status and some summary statistical findings from recent census surveys, and a chart of home ownership by age of householder from recent census surveys.



The **Transportation Overview** report can be accessed by clicking on the Transportation sub-header, revealing two charts: Percent of Commuters by Travel Time to Work and Percent of Workers by Means of Transportation to Work.



The final HotReport topic is the **Community Assets Overview**, which summarizes community educational facilities and advanced educational institutions (if any) in the community and provides a link to a national database, “America’s Service Locator” <http://www.servicelocator.org/>. The Service Locator database provides access to national and state job recruitment (“job bank”) sites and other employment and career coaching resources.

Summary Reports: Overview Economics Demographics Housing Transportation Community Assets

Community Assets Overview



Public Schools - Kindergarten - Grade 12 in Stafford County, Virginia

Number of Schools by Level and Type

School Level	Total All Types	Regular school	Special education school	Vocational school	Other/alternative school
Total All Levels	26	24	0	0	2
Primary	14	14	0	0	0
Middle	6	6	0	0	0
High	4	4	0	0	0
Any other configuration	2	0	0	0	2

Data Sponsored By [Just Center for Political and Economic Research](#)
 **Data Source: [CCO-Public Elementary/Secondary School Universe Data\(200\)](#)

Students and Teachers by Level of School

School Level	Total students, All Grades	Total Classroom Teachers	Student-Teacher Ratio
Total All Levels	24,869	1,943	12.2
Primary	11,225	721	15.7
Middle	6,577	438	15.0
High	7,467	213	14.8
Any other configuration	0	0	0

Data Sponsored By [Just Center for Political and Economic Research](#)
 **Data Source: [CCO-Public Elementary/Secondary School Universe Data\(200\)](#)

Level Definitions:
 Primary - can include pre-kindergarten through grade 3
 Middle - can include grades 4 through 6
 High - can include grades 7 through 12
 Any other - any other configuration not falling within the above three categories, including Ungraded

Industry Focus

This tool is designed to allow the user to easily retrieve a fairly comprehensive report on the health of local industry by allowing the user to select from a list of ranking criteria, including: employment, growth in employment, growth in hiring, number of new hires, firm job change, average monthly earnings for all workers, growth in average monthly earnings for all workers, and average monthly earnings for new hires.

Data on one or all of these statistical indicators can be displayed in the resulting report for a user-defined level of geography (e.g. State, sub-state workforce area, metro or county/city). Moreover, the user can set how many industrial sectors are considered in the ranking report (from a minimum of 2 to a maximum of 16).

Additionally, the user can set selection criteria to look at the age and gender of the worker population included in the report, as well as limit the report to see how all sectors were ranked or how a specific industrial group (sub-sector) performs against the top-ranked (or all) industrial sectors.

User Instructions:

Access the Industry Focus tool by going to lehd.did.census.gov/led/datatools/datatools.html and then clicking on the **Industry Focus** link.

The following are different components of this site.

The screenshot shows the 'Industry Focus: Selecting Top Industries' interface. At the top, there is a navigation bar with links for Home, Local Employment Dynamics, Data Tools, Research, Library, and About Us. Below this is a search box and a 'Print' button. The main heading is 'Industry Focus: Selecting Top Industries'. A text prompt says 'List the top industries ranked by the greatest:'. Below this is a table with three columns: 'Ranking Indicator (Select One)', 'Include in report (Select One or More)', and a list of indicators. The indicators include Employment, Growth in Employment, Growth in Hiring, Number of New Hires, Firm Job Change, Average Monthly Earnings for All Workers, Growth in Average Monthly Earnings for All Workers, and Average Monthly Earnings for New Hires. Below the table are filters for 'Age and Sex' (Age: 14-99, Sex: Male and Female), 'Geography' (State: Alabama, Entity: Statewide, InSA, County, Metro Area), and 'Industry Sector' (All Sectors). At the bottom are buttons for 'View Report', 'Download CSV', and 'Create PDF'. Red letters A through L are overlaid on the interface to label specific components: A points to the top count input, B points to the Ranking Indicator column, C points to the Include in report column, D points to the Age and Sex filter, E points to the Sex dropdown, F points to the State dropdown, G points to the Entity radio buttons, H points to the Industry Sector radio buttons, I points to the Industry Sector dropdown, J points to the View Report button, K points to the Download CSV button, and L points to the Create PDF button.

- A.** Number of Industries In Ranking Report (select from 1- 87)
- B.** Select the Economic Indicator to use in Ranking the Industries (see list in right column)
- C.** Select (one or more) Economic Indicator to be included in Report
- D.** Select the Age Group to be described in the Ranking Report
 - Age 14 – 99
 - Age 14 – 18
 - Age 19 – 21
 - Age 22 – 24
 - Age 25 – 34
 - Age 35 – 44
 - Age 45 – 54
 - Age 55 – 64
 - Age 65 - 99
- E.** Select the Work Force **Gender** (Male, Female or Both) for the Ranking Report
- F.** Select the **State** to be Profiled in the Ranking Report
- G.** Select the **Geographic Level** within the selected State for the Ranging Report
 - Statewide
 - Workforce Investment Area (WIA)
 - County (includes Independent Cities in Virginia)
 - Metro Area
- H.** Select whether the Ranking Report is to be based on a **Specific Industrial Sector** or **Specific Industry** (i.e. sub-sector)
- I.** After making a selection for **H**, choose whether Ranking Report includes All Sectors or use drop-down arrow to select a specific Industrial Sector or Industry.
- J.** Click on “**View Report**” to the Ranking Report based on the selected options
- K.** If the Ranking Report is satisfactory, click on “**Download CSV**” to receive an electronic copy of the report in CSV (comma-separated value format) which can be imported into a database or spreadsheet program.
- L.** Alternatively, click on “**Create PDF**” to produce an electronic copy of the formatted report which can be distributed via e-mail or posted on a website.

Quarterly Workforce Indicators (QWI) & QWI Online

The Quarterly Workforce Indicators are derived from the LED partnership and are possible because of an innovative system that merges data already collected from various sources. The state Labor Market Information (LMI) agencies supply key data from unemployment wage records and from businesses each quarter. The Census Bureau merges the data from the LMIs with current demographic information to produce the data found on the LED web site. By combining data from different administrative sources, censuses and surveys, the Census Bureau produces local employment information that was not available before.

The Census Bureau produces 29 labor force indicators and publishes eight of them in QWI Online. The eight indicators include total employment measures of change, such as job flow, new hires, separations and average earnings. The additional 21 indicators are provided directly to the states; LMIs may choose to share them, upon request. The same 29 indicators are produced for all states in the partnership but they cover differing historic periods, based on what each state provides. Each of the states represented in the QWI Online currently has data beginning in 2001. The data are refreshed about nine months after the end of each quarter.

Using the Comparison Report feature in QWI Online, you can compare labor market information by time, geography, sex, age and other variables. You can chart the data by specified period or by each of the four quarters of the year selected. You can download this information to create custom tables and charts.

User Instructions:

Begin by navigating to the Longitudinal Employer-Household Dynamics website

<http://lehd.did.census.gov/led/>

Click on “QWI Online” under “Quick Links” column

Other ways to access QWI Online....

Click “Data Tools” tab at the top of the webpage or the “Data Tools” link at the bottom of the page

Click QWI Online link



Select Industrial Classification System for Reporting & Analysis. The default is North American Industry Classification System (NAICS) based statistics. Standard Industrial Classification (SIC) statistics are available by clicking the “SIC-based statistics” hyperlink. Data is available from as early as 1990 for some states.

U.S. Census Bureau
Local Employment Dynamics **All About Jobs**

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Print Search

QWI Online [NAICS]

Select a state from the following table to access NAICS-based statistics. Click [here](#) to access [SIC-based statistics](#). While NAICS series continue to be updated on a quarterly basis, the SIC-based QWI ceased to be updated as of the 2007Q2 data update. If a state does not have an active link, it means either it is a new partner whose data are being processed or it is not a partner in the voluntary Local Employment Dynamics (LED) partnership (state name in *italics*).

- Technical Paper No. TP-2006-01
[The LED Infrastructure Files and the Creation of the Quarterly Workforce Indicators](#) (PDF; File Size: 766KB)
 Date: January 2006. Author(s): John Abowd, Bryce Stephens and Lars Vilhuber
[Detailed QWI Definitions](#) (PDF; File Size: 272KB)
 Date: January 2006. Author(s): John Abowd, Bryce Stephens and Lars Vilhuber
[Generalized QWI definitions](#) (PDF; File Size: 76KB)
 Date: April 2006. Author(s): Erika McEntarfer, Cynthia Tauber

The year and quarter number below each state indicate the latest complete update for that state.

Alabama (2006 Q4)	Florida (2006 Q3)	Louisiana (2006 Q4)	<i>Nebraska</i>	Oklahoma (2006 Q3)	Vermont (2006 Q4)
Alaska (2006 Q4)	Georgia (2006 Q4)	Maine (2006 Q4)	Nevada (2006 Q4)	Oregon (2006 Q3)	Virginia (2006 Q2)
<i>Arizona</i>	Hawaii (2006 Q4)	Maryland (2006 Q4)	<i>New Hampshire</i>	Pennsylvania (2006 Q3)	Washington (2006 Q3)
Arkansas (2006 Q4)	Idaho (2006 Q3)	<i>Massachusetts</i>	New Jersey (2006 Q3)	Rhode Island (2006 Q3)	West Virginia (2006 Q4)
California (2004 Q4)	Illinois (2006 Q3)	Michigan (2006 Q3)	<i>New Mexico</i>	South Carolina (2006 Q4)	Wisconsin (2006 Q3)
Colorado (2006 Q3)	Indiana (2006 Q3)	Minnesota (2006 Q1)	<i>New York</i>	<i>South Dakota</i>	Wyoming (2006 Q4)
<i>Connecticut</i>	Iowa (2006 Q3)	Mississippi (2005 Q3)	North Carolina (2006 Q3)	Tennessee (2006 Q3)	<i>Puerto Rico</i>
<i>District of Columbia</i>	Kansas (2006 Q3)	Missouri (2006 Q3)	North Dakota (2006 Q4)	Texas (2006 Q3)	<i>Virgin Islands</i>
Delaware (2006 Q4)	Kentucky (2006 Q3)	Montana (2006 Q4)	<i>Ohio</i>	Utah (2006 Q3)	

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Source: U.S. Census Bureau, Data Integration Division - [Contact Us](#) - Last Revised: January 22, 2007

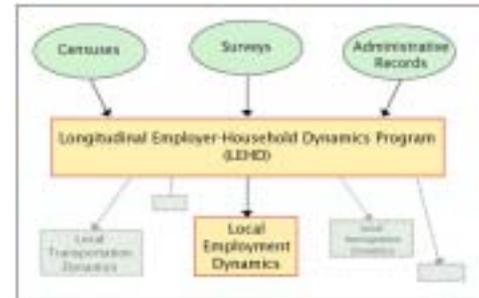
For more information on NAICS and SIC classifications see the websites below:

<http://www.osha.gov/pls/imis/sicsearch.html>
<http://www.census.gov/epcd/www/naics.html>

Glossary of Terms:

Longitudinal Employer-Household Dynamics (LEHD) - is an innovative program within the U.S. Census Bureau. The LEHD project uses modern statistical and computing techniques to combine federal and state administrative data on employers and employees with core Census Bureau censuses and surveys, while protecting the confidentiality of people and firms that provide the data.

Local Employment Dynamics (LED) - is a voluntary partnership between state labor market information agencies and the U.S. Census Bureau to develop new information about local labor market conditions at low cost, with no added respondent burden, and with the same confidentiality protections afforded census and survey data.



Quarterly Workforce Indicators (QWI) - are a set of economic indicators, including employment, job creation, wages, and worker turnover that can be queried by different levels of geography, such as state, county, metro, and workforce investment area, as well as by detailed industry, gender, and age of workers.