
PCensus

ArcView[®]



User's Guide

Version 9.0

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Table of Contents

1	Getting Started with PCensus.....	5	9	Profile a Drive Time Area.....	37
	Welcome to PCensus.....	5		Objective.....	37
	Installing PCensus.....	6		Background.....	37
	PCensus Databases.....	7		Steps to Profile a Drive Time Area by Pointing.....	37
	Starting PCensus.....	7		Default Drive Time Settings.....	37
	Getting Help.....	7	10	Using the Study Area Manager.....	41
	Context-Sensitive Help.....	8		Background.....	41
	Other Sources of Help.....	8	11	Profile a Traced Polygon Area.....	43
2	PCensus Projects.....	9		Objective.....	43
	Background.....	9		Background.....	43
	The Project Window.....	9		Steps to Profile a Polygon.....	43
	The PCensus Tool Bars.....	10	12	Profiling Polygons from a Map Layer.....	45
	Fly-out Windows.....	10		Objective.....	45
	Tabbed Report Window.....	10		Background.....	45
	Split Views.....	12		Steps to Profile a Polygon.....	45
3	Starting a Project.....	13	13	Using ArcGIS Maps.....	49
	The Task Window.....	13		Objective.....	49
	Set Up a Project.....	14		Background.....	49
	Working with Real Data.....	15		Using StreetMaps.....	49
	What Can I Do Now?.....	16		Using ArcGIS Address Locators.....	51
4	Databases and Templates.....	17	14	Use “Data Fit” to Define a Circle or Drive Time Based on Demographics.....	53
	PCensus Databases.....	17		Objective.....	53
	Data Templates.....	17		Background.....	53
5	Profile Predefined Areas.....	19		Steps to Profile a Data Fit Circle.....	54
	Objective.....	19	15	Thematic Mapping with Boundaries.....	57
	Background.....	19		Background.....	57
	Steps to Profile Predefined Areas.....	19		Matching Data Points to Boundaries by Code.....	57
	Create a Profile Column for the United States.....	21		Matching.....	57
	Using the Category Selector.....	22		Matching by Point-In-Polygon.....	58
	Create a Profile Column for Selected Counties.....	22	16	Create a Thematic Boundary Map.....	61
	What Can I Do Now?.....	24		Background.....	61
6	The Executive Summary Report.....	25		Steps to Create a Thematic Boundary Map.....	61
	Objective.....	25		Set the Thematic Mapping Defaults.....	62
	Background.....	25		Select the Variable to be Displayed in the.....	62
	Steps to Create an Executive Summary Report.....	25		Thematic Map.....	63
7	Using the Database Explorer.....	27		Select the Area to Map.....	64
	The Database Explorer Window.....	27		Mapping “Discrete” Values.....	66
	Features of Database Explorer.....	28	17	Create a Thematic Point Map.....	69
	Drilling Down Geographies.....	29		Objective.....	69
	Hot Links.....	30		Background.....	69
8	Profile a Circular Area (Radius Report).....	33		Steps to Create a Thematic Point Map.....	69
	Objective.....	33	18	Create a Dot Density Map.....	71
	Background.....	33		Objective.....	71
	Steps to Profile Circular Areas by Address.....	33		Background.....	71
	Default Circle Settings.....	34		Steps to Create a Dot Density Map.....	71
	Address Searching using ArcView.....	34			

PCensus User's Guide

19 Create an Advanced Thematic Map	77	27 Create a Pointfile	129
Objective.....	77	Objective	129
Background	77	Background	129
Steps to Create an Advanced Thematic Map.....	77	Limitations	130
20 Create a Target List	85	Steps to Export a Pointfile	131
Objective.....	85	28 Export the Target List	135
Background	85	Objective	135
Steps to Create a Target List.....	85	Background	135
Specify the Study Area	86	Steps to Export the Target List.....	135
Select a Lifestyle	86	29 Save a Project to Microsoft Word	137
Refine the Lifestyle	88	Objective	137
Add a New Dimension to the Lifestyle.....	90	Background	137
Cumulative Display	94	Prior Steps Required	137
Lifestyle Statistics	95	Steps to Save a Project to Microsoft Word	137
21 Create a Profile Graph	97	30 Refresh a Project Using a New Database ..	139
Objective.....	97	Objective	139
Background	97	Background	139
Steps to Create a Profile Graph	97	Steps to Update a Project	139
Customize the Graph.....	99	31 Understanding the Profile Browser	141
Graph Styles.....	100	Objective	141
22 Create a Target Graph	103	Background	141
Objective.....	103	Prior Steps Required	141
Background	103	Templates and Categories	141
Steps to Create a Target Graph	103	The Percentage Column	143
What Can I Do Now?	104	Multi-Column Reports.....	143
23 SiteScan - Scan an Area for Potential		Benchmarking Profile Columns.....	144
Sites	105	Saving Reference Areas	145
Objective.....	105	32 Customizing the Profile	147
Background	105	Objective	147
Steps to Create a SiteScan Project	107	Background	147
24 SiteScore - Scoring and Statistics	111	Prior Steps Required	148
Objective.....	111	Create a New Template	148
Before You Continue	111	Edit the Category Heading	149
Background	111	Paste lines into a Category	150
SiteScore Methodology	112	Organize the lines in a Category.....	151
Simple Scoring	115	Add Text to a Profile Category	152
Scoring with Multiple Variables.....	118	Create New Detail lines.....	153
Scoring with Custom Ranges	120	Formatting Lines in the Profile.....	154
25 Print a Report	123	Saving Your Changes	155
Background	123	Advanced Data Types in the Profile.....	155
Steps to Print the Project Report.....	123	Median Values.....	156
Header and Layout Tab.....	124	Dominant Groups	157
Maps Tab.....	125	Benchmark and Universe "Operators"	158
Profile Reports.....	125	Multi-Column Reports.....	159
Target Reports.....	125	Transform a Data Template to Work with a	
26 Export the Profile	127	Different Database	161
Objective.....	127		
Background	127		
Steps to Export a Profile.....	127		

Table of Contents

33 Understanding the Target Browser	163	38 Importing Data to Create a Point Map.....	201
Objective	163	Objective	201
Prior Steps Required	163	Prior Steps Required	201
Viewing Rejected Targets	163	Steps in Mapping Imported Data	201
Interpreting the Target List	164	Select the Data to Import	201
Zooming to a Target Record	165	Geocoding	202
Target Properties	165	Identify the Geographic Coordinates	203
Create Batch Sites for Selected Targets	166	Create the Map	203
Locating a Target on the Map	167	39 Refresh Imported Data	205
Searching the Target List	168	Background	205
34 Create Custom Geographies.....	169	Refresh an Extended Database	205
Background	169	Add New Data Fields to an Extended Database.....	207
Custom Geographies and Thematic Mapping	170	40 Using “Donut” Study Areas.....	211
Steps to Create a Custom Geography	171	Objective	211
Using the Custom Geography	174	Background	211
35 Using Your Own Data in PCensus	177	Steps to Create a “Donut” Study Area	211
Background	177	41 Complex Mapped Study Areas.....	215
Import records as Point Data.....	177	Objective	215
Extend an Installed PCensus Database.....	178	Background	215
Mapping Point Data.....	178	Multiple Shapes.....	215
Types of Imported Data.....	178	Shape Properties	215
Data Import Examples.....	180	Interior/Exterior Property	216
36 Importing Point Data.....	181	The Intersector Property	217
Objective	181	Profile Columns.....	217
Prior Steps Required	181	Steps to Create a Modified “Radius” Study Area	218
Steps in Creating a PCensus Database.....	181	42 Batch Site Processing.....	223
Select the Data to Import.....	182	Objective	223
Identify the Area Names.....	182	Background	223
Geocoding	183	Requirements for a Batch Site File	223
Identify the Geographic Coordinates.....	184	Steps to Process Batch Sites.....	224
Identify the Variables in the Imported Data	184	Specify Latitude and Longitude.....	225
Create the Database	186	Select a Field for Naming Sites.....	225
Using the new database.....	188	Select the Study Area Type	226
37 Appending Your Data to a PCensus		Create Sites	227
Database	191	43 User Defined Target Areas	229
Objective	191	Objective	229
Background	191	Background	229
Prior Steps Required	192	Prior Steps Required	229
Steps in Attaching Data to PCensus by ZIP code	193	Create a Target List of Drive Time Areas	229
Select the Data to Import.....	193	44 Using Segmentation Data for Market	
Specify the PCensus Database that will be		Analysis.....	231
Extended	194	Overview	231
Specify How Data will be Merged.....	194	Using the Profile Import Wizard	231
Test the Linkage (Optional Step).....	195	Creating a PCensus Project Using an Imported	
Identify the Variables in the Imported Data	196	Profile	234
Build the PCensus Database	196	Creating a Target Report	235
Describe your Data.....	197	45 Using Segmentation Data for Customer	
Save the Database.....	197	Analysis.....	237
Using the Extended Database.....	198	Background	237
Attaching Data by Block Group FIPS Code.....	199	Steps to Import Segment Coded Data	238
		Using the Extended Database	240

PCensus User's Guide

46 Penetration Analysis – a CRM Tool	245
Objective.....	245
Background	245
Methodology	245
Steps in Penetration Analysis.....	247
Finding New Markets.....	249
Appendix 1 – Database Management	253
Installing PCensus Databases.....	253
Registering Databases for Use on a Network	253
Registering Data Templates	254
Deleting Databases	254
Appendix 2 – Census Geography	257
States	257
Counties	258
Census Tracts	258
Block Groups (BGs).....	259
Blocks	259
Core Based Statistical Areas (CBSAs).....	260
Places.....	261
ZIP Codes.....	262
Appendix 3 – Block Prorating	263
The Effect of Study Area Size on Precision.....	263
Enhanced Precision Using Blocks.....	265
Methodology	265
Appendix 4 - Creating a Map Set	269
Creating a Map Set.....	269
Create a new Map View	269
Adjust the Content and Appearance of the Map....	270
Set the Default Map Location	271
Set the Default Database and Template	271
Save the Map Set	272

1 Getting Started with PCensus

Welcome to PCensus

PCensus is a tool that gives you access to detailed demographic information for any location in the United States and Canada, including Census data, current and future year estimates, consumer spending, market segmentation, workplace population, retail sales data and businesses. It provides powerful analytical features for:

- Demographic profiling: define a geographical area such as a county, a neighborhood, a circular area or a drive time zone and create a detailed report of its demographic characteristics.
- Lifestyle targeting: define a population segment using selected demographic criteria (for example, income and family size), and then search for the geographic areas whose populations most closely match your definition.
- Thematic Mapping: create maps that show the geographic variation of demographic characteristics using colored shading or symbols.
- Graphing: display demographic information in bar charts or pie charts.
- Automatically creating a Microsoft Word document containing all reports, maps and graphs from the current project; you can add your own text and formatting to create a finished record of your work suitable for printing, emailing, or for inclusion in other documents.
- Exporting data in Microsoft Excel[®], ASCII, HTML or dBase formats for use in other applications. These common formats allow use with many specialized applications, including ArcView (for advanced mapping), or with custom software for advanced analysis such as Huff gravity modeling.
- Integrating your own data, (surveys, customer purchases, sales volumes, etc.) with demographic data to assess performance of marketing schemes or to plan strategies.
- Implementing customer relationship management (CRM) solutions to identify factors that define successful markets (e.g. income, education, or PRIZM market segments) and use these to identify potential new markets.

PCensus User's Guide

This manual uses simple examples to highlight the various capabilities of PCensus®. You are urged to work through these examples to see the ways that the techniques illustrated might be applied to solve your own business issues.

Many of the tasks illustrated in the tutorials refer to a sample database for the city of Bellingham, Washington. This database illustrates the data content available for a typical PCensus installation, but it has been somewhat modified and should not be used for real projects.


Installing PCensus

To use PCensus, you need the following:

- A computer running Windows Vista® or Windows® XP Professional.
- A sufficient amount of disk space, depending upon which database and mapping components you install. Databases may vary in size from less than one megabyte to several gigabytes.
- ESRI® ArcView™ version 9.1 or higher must be installed on your computer. It is recommended that you install StreetMap USA, which provides detailed street maps as well as census and ZIP code boundaries (see Chapter 13, Using ArcGIS Maps, page 49).

Before you can use PCensus, you must install the program and any databases you have purchased.

To install the PCensus program, insert the PCensus program CD in your CD drive. The installation process should start automatically; if it does not, run Setup on the CD to start the installation

 *The **PCensus** program CD is supplied in a sealed envelope. Be sure to read the terms of your license agreement before opening it.*

The installation program prompts you for the name of the folder where PCensus will be installed. If the location you specify does not exist, it will be created automatically.

PCensus Databases

PCensus databases are the computer files that contain demographic information. Each database covers a specific area (for example a county, a state, or an entire country).


We have provided some sample databases so that you can try out the features of PCensus right away. To use PCensus for a real project, you must install a database that covers your area of interest.

Databases are normally shipped on CDs, and they must be properly installed on your computer before they can be used. Follow the installation instructions provided with the Database CDs.

 *Note: PCensus must not be running while you are installing databases.*


Starting PCensus

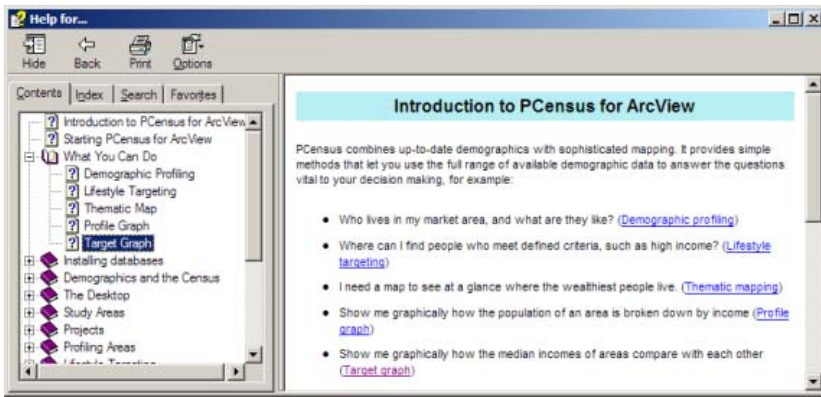
After you have installed PCensus, and any databases that you have

purchased, you can start the program by clicking its desktop icon .

Getting Help

The PCensus Help system can answer many of the questions you may have about the operation of PCensus, and provides useful information about

census geography. To access the Help system, click the **Help** icon  in the PCensus toolbar.




PCensus User's Guide

The Table of Contents in the left pane of the window shows the major Help topics. Clicking on a topic displays a page of information in the right-hand pane.


Topics are arranged in “books” representing the major subject areas. Click the “+” sign next to a book to see the topics that it contains.

Most topics contain “links”; words or phrases underlined and highlighted in blue. Clicking on a link displays additional pages of relevant information.

If you are unsure of the meaning of a term, the **Index** and **Search** tabs let you find topics by keywords or by a full text search of the Help system.

 *The section **Demographics and the Census** provides a useful description of the structure and relationships of geographic components used by the census.*

Context-Sensitive Help

Every dialog box in PCensus has an associated Help screen that you can view by clicking its  button. In situations where no dialog box is displayed, you can get help by pressing the **F1** key.

Context-sensitive help provides detailed descriptions of all the controls used by PCensus, with links to other relevant information.

Other Sources of Help

Additional help can be obtained over the internet by clicking “PCensus Website” in the “Help” menu. This link allows you to access the PCensus on-line knowledge base, or to submit technical questions via email.

Alternatively, you can send questions to **support@tetrad.com**.

2 PCensus Projects

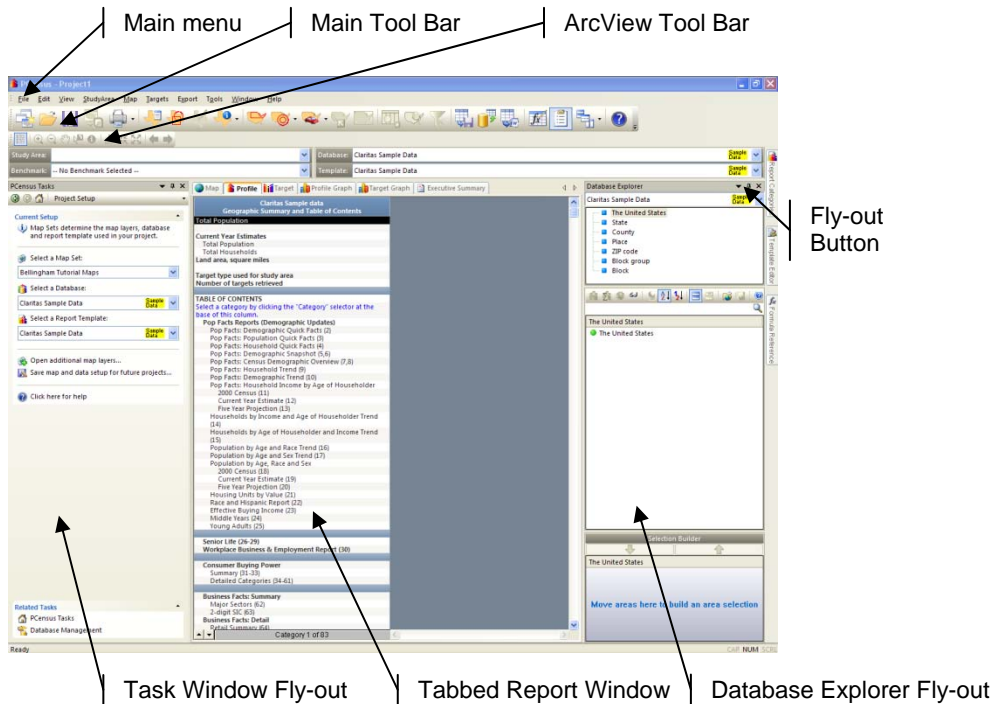
Background

A PCensus project contains all the profiles, reports, graphs, or maps that you create in the course of your work. A new project will be created when you start a PCensus session. When you have finished, you can save the project so that it can be restored in a future session.

You can work with several projects simultaneously in a PCensus session; each project will have its own window.

The Project Window

The illustration below shows a typical configuration of the PCensus project Window.




PCensus User's Guide

Many aspects of the project window can be customized; for example tool bars can be dragged to new locations, or made to “float” outside the main window.

 To revert to the standard configuration, select **Reset Window Layout** from the **Window** menu.

The PCensus Tool Bars

The project window contains one or more tool bars (depending on the type of integrated mapping installed).


 You can see a description of the function of each tool bar icon by allowing the mouse cursor to “hover” over the icon.

- **Main Tool Bar:** provides short-cuts to many frequently used PCensus functions.
- **ArcView Tool Bar:** Controls operations in the Map Window. This tool bar corresponds to the tools used in ArcView.

Fly-out Windows

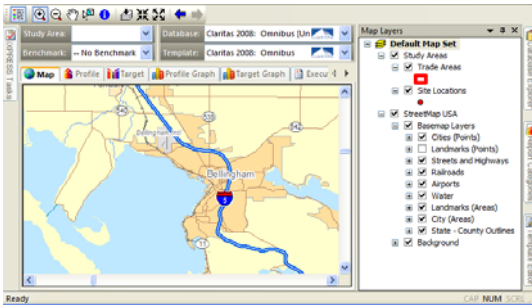
Fly-out controls are used extensively in PCensus, for example in the **Task Window**, **Database Explorer** and **Template Editor** windows. These windows are controlled by buttons in the left and right margins of the project window.

Fly-out windows can be used in two ways:

- They can be briefly displayed and used by hovering the mouse over the appropriate button (clicking is not necessary). When the desired operation is complete, they will be hidden automatically.
- They can be locked in place when repeated use is required (for example for editing a template). Each fly-out window contains a push-pin  button to toggle the auto-hide and locked settings.

Tabbed Report Window

This section of the project window contains the various reports and maps generated by PCensus. Click in the labeled tabs at the top of the window to switch between the various pages.



The **Map** page displays the outlines of study areas (circles, polygons, drive time zones) that you define, as well as colored thematic maps that you create.

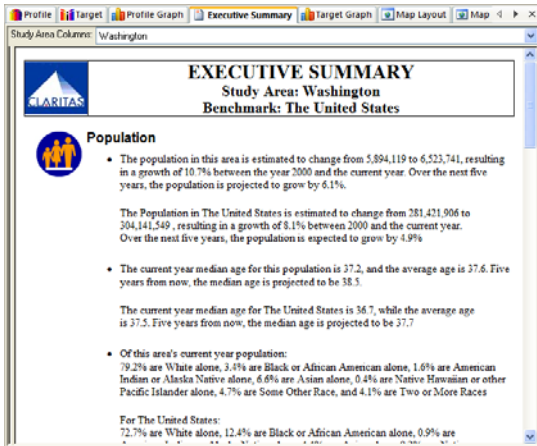
Demographic Quick Facts	The United States	San Diego County, CA	Traced Polygon
Population			
2013 Projection	319,161,431	3,223,323	69,592
2008 Estimate	304,141,549	2,046,961	65,674
2000 Census	281,421,906	2,813,833	66,328
1990 Census	240,709,873	2,490,016	62,482
Growth 1990-2000	15.15%	12.64%	10.96%
Households			
2013 Projection	130,743,378	1,136,170	30,612
2008 Estimate	114,694,201	1,074,776	30,368
2000 Census	105,480,101	991,677	30,878
1990 Census	91,947,410	887,403	29,801
Growth 1990-2000	14.72%	12.09%	3.61%
2008 Estimated Population by Single Race Classification			
White Alone	221,158,747 72.72%	1,938,534 63.62%	32,693 47.61%
Black or African American Alone	37,812,661 12.42%	149,115 4.89%	8,710 12.69%
American Indian and Alaska Native	2,811,378 0.92%	26,643 0.82%	668 0.97%
Asian Alone	13,335,736 4.38%	310,902 10.20%	4,182 6.09%
Native Hawaiian and Other Pacific Islander Alone	473,649 0.16%	14,135 0.46%	329 0.48%
Some Other Race Alone	19,900,090 6.56%	447,915 14.70%	17,399 25.34%
Two or More Races	8,589,460 2.82%	159,617 5.24%	4,686 6.82%
2008 Estimated Population Hispanic or Latino			
Hispanic or Latino	46,336,030 15.24%	938,860 30.68%	31,661 46.10%
Not Hispanic or Latino	237,805,519 84.76%	2,112,001 69.32%	37,013 53.90%
2008 Tenure of Occupied Housing Units			
Owner-Occupied	76,970,610 67.12%	602,464 56.05%	5,651 18.61%
Renter-Occupied	37,715,591 32.88%	472,312 43.95%	24,717 81.39%
2008 Average Household Size			
	2.58	2.73	2.24
2008 Estimated Households by Household Income			
Less than \$15,000	14,643,499 12.77%	95,479 8.88%	5,006 16.49%
\$15,000 to \$24,999	12,231,297 10.66%	91,889 8.53%	4,802 15.81%
\$25,000 to \$34,999	12,631,539 11.04%	101,346 9.43%	4,996 15.13%

The **Profile** page displays demographic data for each study area defined in your project. Data for study areas is shown in side-by-side columns for easy comparison.

Rank	Washington ZIP code List	Percentage owner occupied housing units	Expenditure per household on gardening services	Total owner occupied housing units
1	96002 Medford	61.09	517	1019
2	96005 Sammamish	30.15	437	4,064
3	96053 Redmond	93.38	421	3,497
4	96074 Sammamish	89.81	420	6,126
5	96007 Woodinville	94.24	604	3,976
6	96040 Mercer Island	80.48	392	6,790
7	96006 Bellevue	80.04	359	10,172
8	96110 Bainbridge Island	78.33	338	6,760
9	96333 Fox Island	91.70	333	961
10	96019 Duvall	88.80	332	2,560
11	96072 Woodinville	80.12	330	6,215
12	96029 Issaquah	78.02	328	4,097
13	96296 Snohomish	91.28	326	6,115
14	96012 Seattle	56.55	233	5,812
15	96033 Kirkland	64.28	306	8,932
16	96008 Bellevue	75.84	301	6,822
17	96027 Issaquah	73.58	300	6,125
18	96422 Tacoma	78.76	300	3,673
19	96177 Seattle	79.16	298	6,014
20	96044 Carnation	86.70	284	2,105
21	96004 Bellevue	60.66	293	6,257
22	96038 Maple Valley	88.10	290	6,995
23	96331 Gig Harbor	84.25	290	4,004
24	96883 Maxima	80.46	289	70
25	96333 Gig Harbor	74.36	289	6,544
26	96052 Redmond	57.37	288	11,747
27	96018 Jirak Diamond	89.81	288	1,340
Accepted	523 Targets	64.59	218	1,466,993
Rejected	9 Targets	0.00	80	0
Total	532 Targets	64.59	218	1,466,993

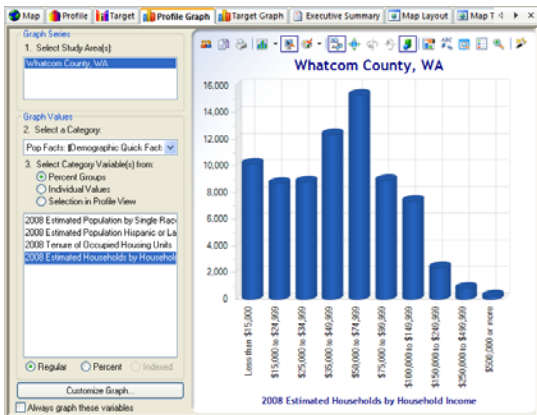
The **Target** page lists areas (called target areas) within your study area that match a specific demographic profile; for example, you can list all the ZIP codes where the average income is between \$40,000 and \$50,000.

PCensus User's Guide



The **Executive Summary** tab displays a narrative summary of the demographics for a selected area.


Note: the Executive Summary is not available for all PCensus databases.



The **Profile Graph** and **Target Graph** pages display data for your project in graphical form.

Split Views

It is often desirable to be able to view the contents of two or more tabbed report windows simultaneously, for example to view the contents of the map tab and the profile tab when using the “hot-link” feature (page 30).

The **Merge/Split** icon  in the PCensus tool bar can create side-by-side or stacked views of the tabbed windows.

Right-clicking in the tabs provides more options for viewing multiple windows.


3 Starting a Project

The Task Window

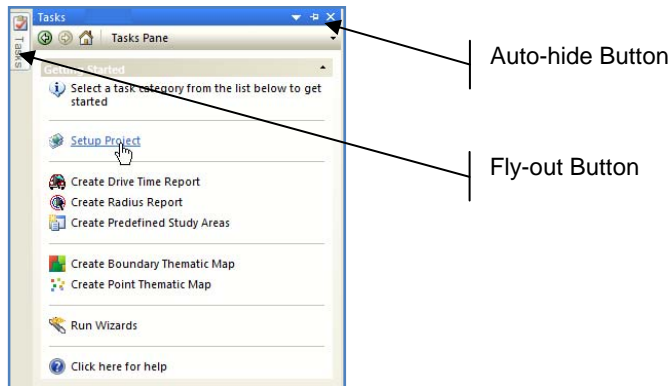
The PCensus Task Window is a feature introduced in PCensus version 9 that substantially reduces the number of steps required to create commonly-used reports and maps. Earlier implementations of PCensus used “wizards” to guide the user step-by-step through a series of choices; the task window allows many of the same results to be produced with one or two mouse clicks.


If you are accustomed to previous versions of PCensus, you will find that the “traditional” wizards are still available in the PCensus tool-bar, and may be used for advanced functions that are not accessible from the Task Window.

The Task Window consists of a number of “panes”. Each pane addresses a specific task, for example to create a profile report or a thematic map. Controls are provided to set up defaults (such as database and map selections) and to minimize repetitive steps in frequently-performed processes.

 *The Task Window is an example of a “fly-out” control that can be displayed briefly to adjust settings, or “locked” in place for more complex operations.*


- Place the mouse cursor in the **Tasks** button in the left-hand frame of the PCensus window.

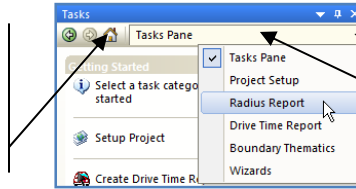


- Click the **Tasks** fly-out button in the left margin.
- Click the **Auto-hide** “push-pin”  button to lock the window in place.

PCensus User's Guide

The first time that the Task Window is opened, it displays the **Getting Started** pane that contains links to the other task panes. You can also navigate through the various panes by clicking in the heading area of the Task Window to display the Tasks menu.

Click the home icon
 to return quickly
to the tasks pane



Click here to display
other tasks

Set Up a Project

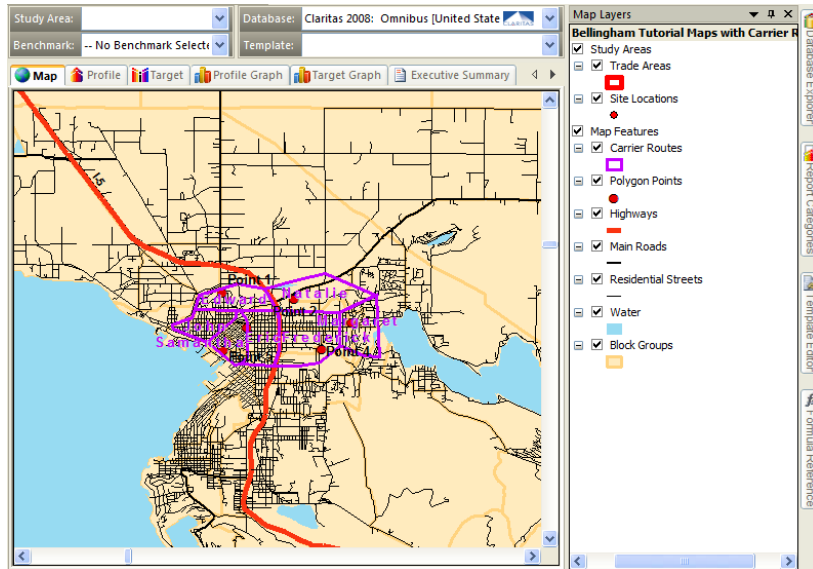
The **Project Setup** window lets you specify the maps, databases and templates to be used when starting a new PCensus project. Although you can select these three components individually, it is more convenient to select a “**Map Set**” that defines a useful starting point for your project.

A Map Set is a “snapshot” of a project’s environment that can be used as a starting point to create a similar project in the future. It records the following criteria:

- The PCensus database to be used as a source of demographic data for a project (see Chapter 4, Databases and Templates).
- A customized template (if any) to define the content of profile reports.
- Map Layers and their display properties and the initial geographic scope of the map window.

To illustrate the use of Map Sets to set up a project, we have included a sample map set entitled **Bellingham Tutorial Maps**. This will be used in many of the examples described in the chapters that follow.

- Display the **Project Setup** pane of the Task Window.
- Select the Map Set “Bellingham Tutorial Maps”.



PCensus automatically opens the map layers required for projects in the Bellingham area, including:

- Street network.
- Boundary layers to be used for thematic mapping, with all customized features, such as color “overrides”.
- The map view adjusts to display downtown Bellingham.
- The Claritas Sample Database and Template are opened.

Working with Real Data

When you begin to use PCensus for real-life projects, you will use fully functional databases and maps in place of the sample data described in the preceding section.

Assuming that you have installed the PCensus databases that you have purchased, they will appear in the **Select a Database** list in the project setup pane. Just select the database with the appropriate data content and geographical coverage for your project’s requirements.

If you have purchased map products such as street networks or boundary maps, they must be installed on your computer according to the specific manufacturer’s instructions; however, this installation will not automatically import them into PCensus. You must open the required ESRI Project (.mxd), layer (.lyr) or shape files (.shp) by clicking **Open Additional map Layers**

PCensus User's Guide

in the **Project Setup** pane, and then use the controls in the ArcView tool bar to create a map view suitable for your requirements.

Creating an attractive and usable map view is a multi-step process, and it would be tedious to repeat this every time you create a new PCensus project, so it is recommended that you create Map Sets to preserve any view that you may need to re-create in future sessions.

For example, if you often need to create reports and maps in a city (for example San Francisco) using current-year demographic data in the context of a street map, you can create a “San Francisco” map set that will appear in the **Project Setup** window.

For instructions on how to set up maps and create a Map Set, see Appendix 4 - Creating a Map Set.

What Can I Do Now?

Once you have set up your project, you can create maps, reports and other analyses. For example, you may:

- Profile reports based on predefined census areas, circles, drive time areas or polygons.
- Create thematic maps displaying demographics as shaded areas or colored symbols.

4 Databases and Templates

PCensus Databases

PCensus databases are the computer files that contain demographic information. Each database covers a specific area (for example a county, a state, or an entire country), and contains a set of data components customized to your specific requirements. These components may include any or all of the following:

- Data from U.S. or Canadian Population Censuses.
- Demographic data estimated for the current (non-census) year or projected to future years.
- Consumer Spending estimates.
- Lifestyle and behavioral segmentation.
- Retail supply and demand estimates.
- Spending patterns.
- Financial assets and instruments.
- Crime risk estimates.
- Shopping centers.
- Financial institutions.
- Traffic Volumes.

The Sample Databases provided as part of your PCensus installation illustrate typical combinations of data components that can be purchased.

Data Templates

Data templates allow PCensus to organize the diverse content of each database into related groups called categories, which correspond to the available standard Profile reports. Templates also define the layout and formatting of profile reports, as described in Chapter 31, Understanding the Profile Browser.

The standard template provided with each database is designed to create profile reports suitable for many purposes. If you need reports specific to the requirements of your industry, refer to Chapter 32, Customizing the Profile.


5 Profile Predefined Areas

Objective

Create a **Profile Report** comparing the demographics for the United States with selected counties.

Background


Predefined study areas are geographic areas that are defined by the contents of the PCensus database in use. In most cases this conforms to the geographical hierarchy used in collecting and disseminating census data. For example, in the United States, census data are summarized at several levels from state, county or city down through places and ZIP code areas to “micro” areas such as blocks or block groups. In Canada, equivalent areas are provinces, census divisions, through postal FSA codes and dissemination areas.

 For detailed descriptions of geographical hierarchies, refer to the section **Demographics and the Census** in the PCensus help system, or to the summary in Appendix 2 – Census Geography in this manual.

Predefined study areas allow you to display profile reports for any area that exists in the database; you do not need to refer to a map to define an area such as “State of Alabama”, “San Diego County” or “Zip code 90210”.

Steps to Profile Predefined Areas

In most PCensus installations, there will be more than one installed database (including the Sample data provided for tutorials). You must tell PCensus which one you want to use for your project. You must also specify which data template will be used to define the contents of the profile report.

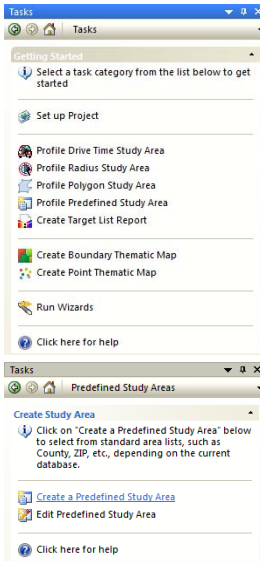
 To use the traditional “Wizard” method for defining study areas, click the **New Predefined**



Study Area icon

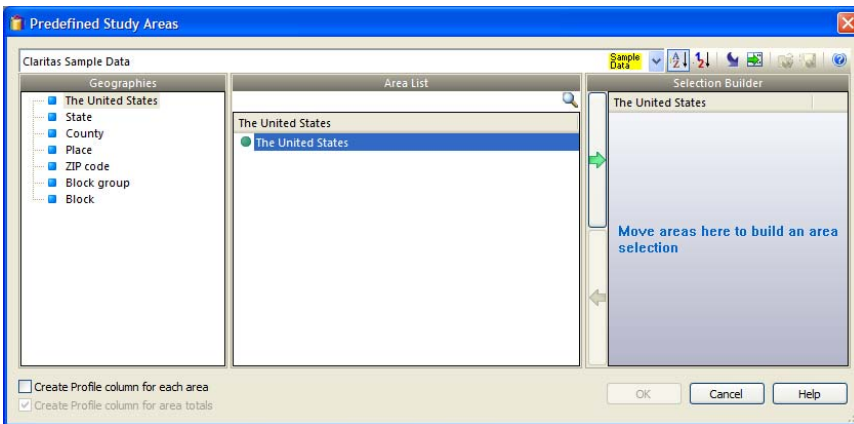



in the PCensus tool bar.

PCensus User's Guide



- Start PCensus and select the **Claritas Sample** database in the **Setup Project** task pane (select the **Bellingham Tutorial Map Set**).
- Return to the **PCensus Tasks Pane** (click the “Home”  icon).
- Click  **Profile Predefined Study Area** to display the **Predefined Study Areas** dialog box.
- Click **Profile Predefined Study Area**.



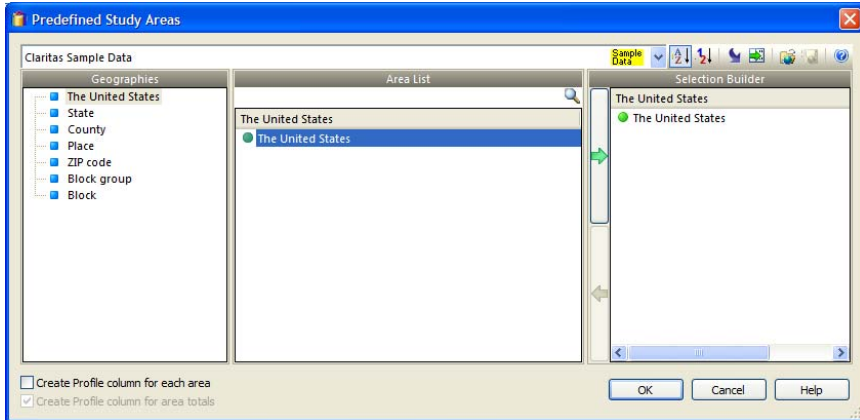
 The **Predefined Study Area** dialog box has many similarities to the **Database Explorer** (page 27).

This dialog box contains three panels:

- The **Geographies** panel lists the types of predefined areas available in the current database.
- The **Area List** panel lists areas of the selected geographic type.
- The **Selection Builder** panel is used to build a list of selected areas.

Create a Profile Column for the United States

- Move **The United States** from the Area List panel into the **Selection Builder**, either by dragging with the mouse or by clicking the ➡ button.



- Click **OK** to add a data column for the selected area to the **Profile** tab.

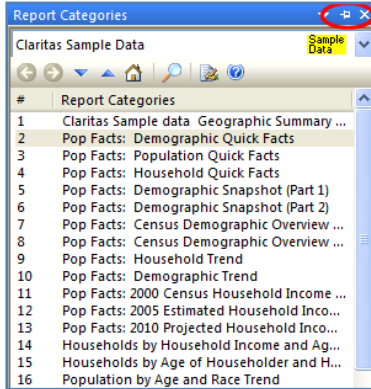
Pop Facts: Demographic Quick Facts		The United States
Population		
2010 Projection		312,383,955
2005 Estimate		298,021,266
2000 Census		281,421,906
1990 Census		248,709,873
Growth 1990 - 2000		13.15%
Households		
2010 Projection		117,920,981
2005 Estimate		112,267,302
2000 Census		105,480,101
1990 Census		91,947,410
Growth 1990 - 2000		14.72%
2005 Estimated Population by Single Race Classification		298,021,266
White Alone	218,543,829	73.33%
Black or African American Alone	36,957,270	12.40%
American Indian and Alaska Native	2,719,439	0.91%
Asian Alone	12,492,949	4.19%
Native Hawaiian and Other Pacific Islander Alone	469,406	0.16%
Some Other Race Alone	18,671,432	6.27%
Two or More Races	8,166,941	2.74%
2005 Estimated Population Hispanic or Latino		298,021,266
Hispanic or Latino	43,251,038	14.51%

PCensus User's Guide

Using the Category Selector

Once you have defined a study area, you can view all of the available profile reports for the area.

- Click the **Report Categories** fly-out in the right-hand margin of the PCensus window, and lock the category selector with the pushpin icon.

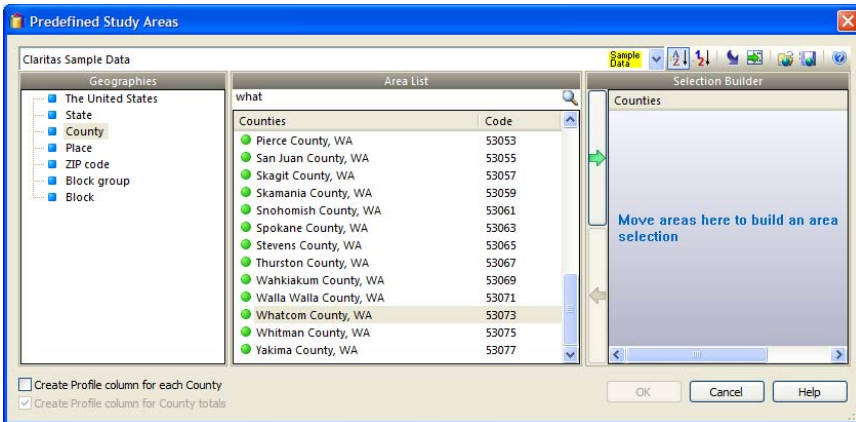


- Use the mouse to select data categories to display in the profile window.

Note: You can right-click on any category and set it as the default to be displayed when you start a project.

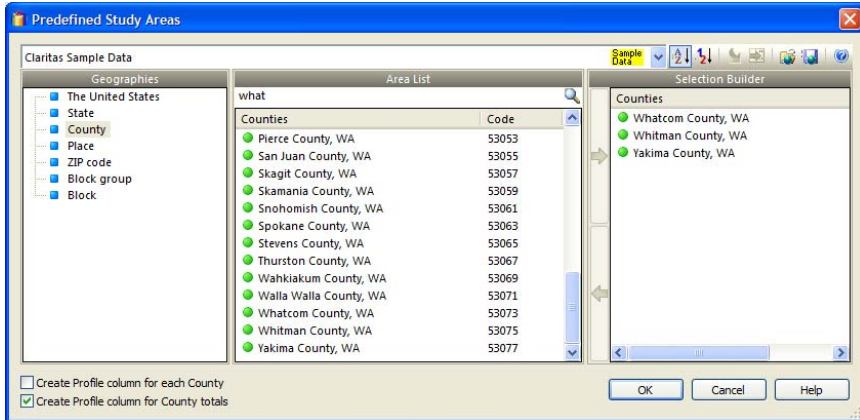
Create a Profile Column for Selected Counties

- Click **Profile Predefined Study Area** to display the **Predefined Study Areas** dialog box.
- Highlight **County** in the list of available geographies
- Begin typing the name **Whatcom** in the search box until **Whatcom County, WA** is visible in the Area List.



- Move **Whatcom County** into the **Selection Builder**.

- Move one or more additional counties in the same way.



When the selection box contains more than one selected area, both checkboxes (Create Profile Column for Each County and Create Profile Column for County Totals) are enabled.

- Check both boxes and click OK to display the columns.

Pop Facts: Demographic Snapshot (Part 1)	The United States	Whatcom County, WA, Whitman County, WA, Yakima County, WA	Whatcom County, WA	Whitman County, WA	Yakima County, WA					
Population										
2010 Projection	312,383,955	478,451	197,420	42,330	238,701					
2005 Estimate	298,021,266	456,355	183,747	41,215	231,393					
2000 Census	281,421,906	430,135	166,814	40,740	222,581					
1990 Census	248,709,873	355,378	127,780	38,775	188,823					
Growth 2005-2010	4.82%	4.84%	7.44%	2.71%	3.16%					
Growth 2000-2005	5.90%	6.10%	10.15%	1.17%	3.96%					
Growth 1990-2000	13.15%	21.04%	30.55%	5.07%	17.88%					
2005 Estimated Population by Single Race Classification	298,021,266	456,355	183,747	41,215	231,393					
White Alone	218,543,829	73.33%	341,698	74.88%	160,070	87.11%	35,624	86.43%	146,004	63.10%
Black or African American Alone	36,957,270	12.40%	4,534	0.99%	1,538	0.84%	712	1.73%	2,284	0.99%
American Indian and Alaska Native	2,719,439	0.91%	15,801	3.46%	5,031	2.74%	271	0.66%	10,499	4.54%
Asian Alone	12,492,949	4.19%	11,009	2.41%	5,943	3.23%	2,791	6.77%	2,275	0.98%
Native Hawaiian and Other Pacific Islander Alone	469,406	0.16%	985	0.22%	324	0.18%	151	0.37%	510	0.22%
Some Other Race Alone	18,671,432	6.27%	67,789	14.85%	5,205	2.83%	562	1.36%	62,022	26.80%
Two or More Races	8,166,941	2.74%	14,539	3.19%	5,636	3.07%	1,104	2.68%	7,799	3.37%
2005 Estimated Population Hispanic or Latino by Origin*	298,021,266	456,355	183,747	41,215	231,393					
Not Hispanic or Latino	254,770,228	85.49%	352,769	77.30%	172,748	94.01%	39,823	96.62%	140,198	60.59%
Hispanic or Latino	43,251,038	14.51%	103,586	22.70%	10,999	5.99%	1,392	3.38%	91,195	39.41%

A profile has been created for each of the selected counties, with an additional column for their aggregate.

What Can I Do Now?

- **Explore the Profile Browser** to see the various data categories available (page 141).
- **Index the Profile Columns** to compare the study areas to a benchmark area (page 144).
- **Add More Study Areas to the Project:** create additional profile columns, either for **Predefined** areas as described above, for **Circular** areas (page 33), for **Drive time** areas (page 37) or for arbitrary **Polygons** (page 43).
- **Print the Profile Report** (page 123).
- **Export the Profile** for use with other software applications (page 127).
- **Customize the profile** with the data template editor (page 147).

6 The Executive Summary Report

Objective

Display a narrative report summarizing the characteristics of a study area.

Background

The executive summary report describes the demographics of an area in “plain English”. The executive summary is based on a special “template” that is installed with each database.

Note: Some databases may not have an associated Executive Summary. Executive Summaries cannot be customized or created by the PCensus user; please contact your PCensus supplier if you require customized reports.

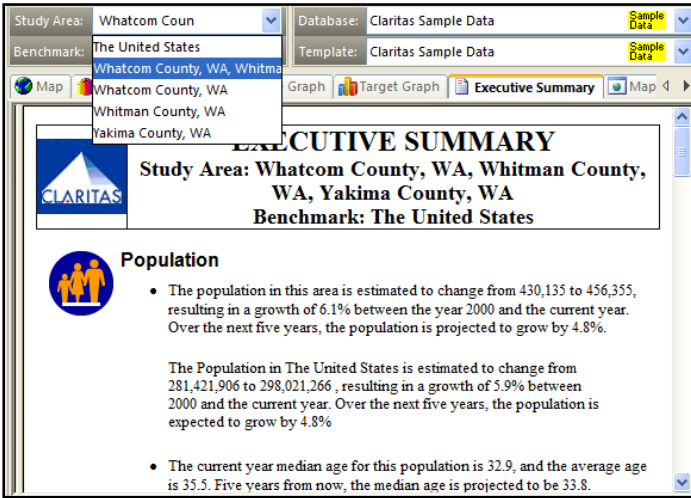
Steps to Create an Executive Summary Report

- Create a profile containing two or more study areas, as described in the preceding chapter.
- Select the **Executive Summary** tab to display the report for the currently selected Study Area.

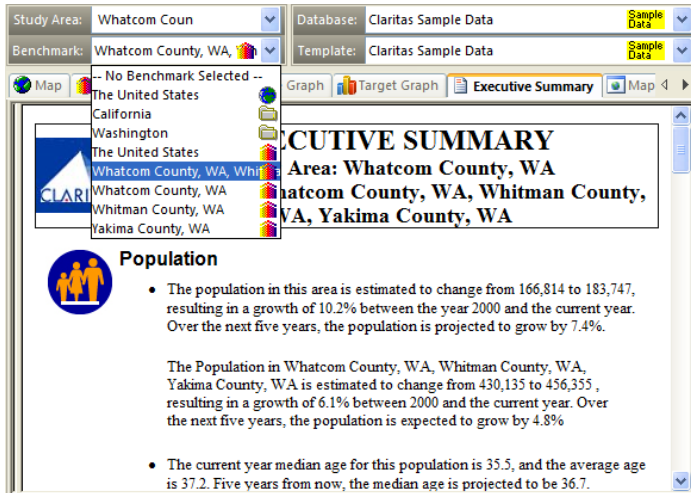
The screenshot displays the PCensus software interface. At the top, there are dropdown menus for 'Study Area: Whatcom County, WA', 'Database: Claritas Sample Data', 'Benchmark: -- No Benchmark Selected --', and 'Template: Claritas Sample Data'. Below these are tabs for 'Map', 'Profile', 'Target', 'Profile Graph', 'Target Graph', 'Executive Summary' (which is selected), 'Map Layout', and 'Map Tables'. The main content area shows the 'EXECUTIVE SUMMARY' for 'Study Area: Whatcom County, WA' with the benchmark 'The United States'. Under the 'Population' section, there are two bullet points:

- The population in this area is estimated to change from 166,814 to 183,747, resulting in a growth of 10.2% between the year 2000 and the current year. Over the next five years, the population is projected to grow by 7.4%.
The Population in The United States is estimated to change from 281,421,906 to 298,021,266, resulting in a growth of 5.9% between 2000 and the current year. Over the next five years, the population is expected to grow by 4.8%
- The current year median age for this population is 35.5, and the average age is 37.2. Five years from now, the median age is projected to be 36.7.
The current year median age for The United States is 36.4, while the average age is 37.2. Five years from now, the median age is projected to be 37.6

PCensus User's Guide



➤ Use the **Study Area** selector to view executive summaries for other study areas in your project.



➤ Use the **Benchmark** selector to change the comparison area used in the executive summary from the United States to other study areas in your project.

What Can I Do Now?

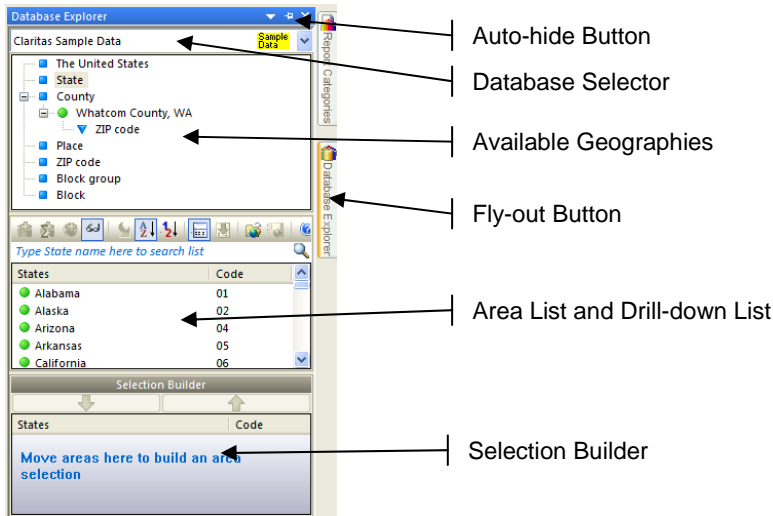
- Click the Print icon  to print the executive summary.


7 Using the Database Explorer

The Database Explorer Window

The Database Explorer is a new feature introduced in PCensus version 9. It provides a quick way to specify “predefined” geographic study areas (e.g. states, counties, ZIP codes), and places these areas in the hierarchy of census geography (Appendix 2 – Census Geography, page 164).

The Database Explorer is normally only visible when it is in use; otherwise it is hidden and represented by a “fly-out button” on the right-hand side of the PCensus window. Click this button to display the page.



- The **Auto-hide** button  is a push-pin icon that locks the Database Explorer page in place and prevents it from being hidden when you click in another window.
- The **Database Selector** is a pull-down list that lets you choose the database to be used in the project.
- The **Available Geographies** list shows the geography types that are represented in the selected database.
- The **Area List/Drill-down List** window serves two functions: If a geography type is selected in the Available Geographies list, it contains a list of areas of the selected type. If a specific area is selected, it shows a list of the geographic types that can be selected within the area.


PCensus User's Guide


- The **Selection Builder** lets you create a list of areas that can be aggregated to a single study area.

Features of Database Explorer

Database Explorer provides several advantages over the methods for “predefined area” selection in older versions of PCensus:

- It allows improved visualization of the geographical relationships between areas.
- It allows you to limit selection based on enclosing geographies (for example, you can display just those ZIP codes that are contained in a specified place or county).
- You can select multiple areas, such as a group of ZIP codes, and simultaneously create study area columns for each of them, or aggregate them into a single study area.
- The “**Hot-link**” feature allows instantaneous viewing of data for any selected area and shifts the map view to the area.

 *Database Explorer provides all of the functionality available in the Predefined Study Area Dialog (page 19), with the additional advantages that it can be accessed immediately at any time, and can be used for ad hoc “hot-link” queries.*

- Click the **Database Explorer** button in the right-hand margin of the PCensus Window to open the Database Explorer Fly-out.
- Click the Auto-hide pushpin  to lock the window.

The **Area List** panel of Database Explorer includes a tool bar that provides access to major functions, as well as a “right-click” context menu.



Profile individually: creates separate profile columns for all currently selected areas.



Profile Aggregated: creates a single profile column for the aggregate of all currently selected areas.



Map Areas: marks the centroids of currently selected areas on the map.








Hot Link: toggles the Hot Link feature (page 30).



Drill Down: enables the drill-down feature (page 29).



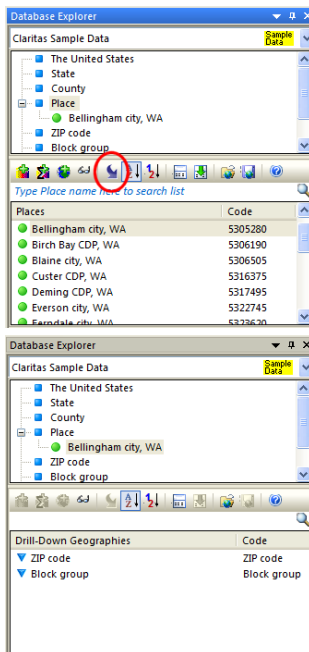
List Name: displays and searches areas by name.

-  **List Code:** displays and searches areas by identifying code (“FIPS” code).
-  **Selection Builder:** toggles the selection builder window.
-  **Add to Selection Builder:** adds selected areas in the area list to the selection builder.
-  **Load Areas File:** imports selected areas from a file.
-  **Save Areas:** exports selected areas to a file.

Drilling Down Geographies

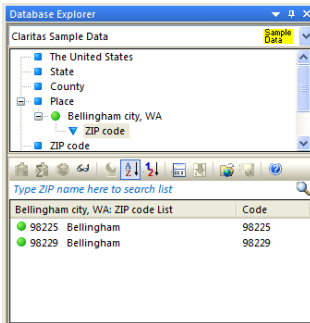
If you are using a database for the entire United States, clicking **ZIP Code** in the **Available Geographies** list would show all the 30,000 ZIP codes in the selection list.

The **Drill-down** feature in Database Explorer lets you display a more manageable list of ZIP codes by limiting the selection to an enclosing geography, for example Bellingham City.

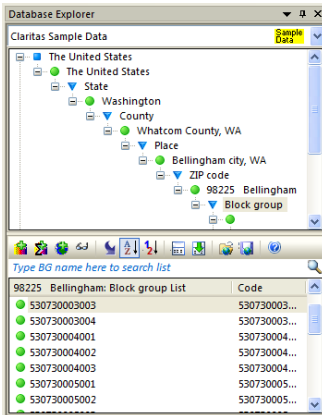


- Highlight **Place** in the **Available Geographies** list.
- Double-click **Bellingham City, WA** in the **Area** list.
- Click the **Drill-down** icon to add Bellingham as a new level in the list of available geographies.
- Select the new entry to display the drill-down geographies available for Bellingham (ZIP Code and Block group).

PCensus User's Guide



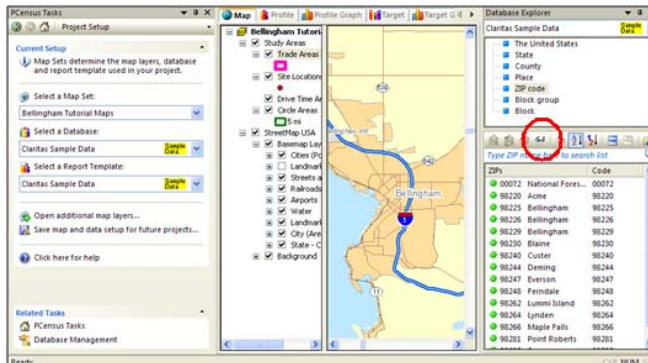
- Double-click ZIP Code in the **Drill-down Geographies** list (or click the drill-down icon) to display the two ZIP codes in Bellingham.
- Drag the required ZIP codes into the profile tab to create new study area columns.



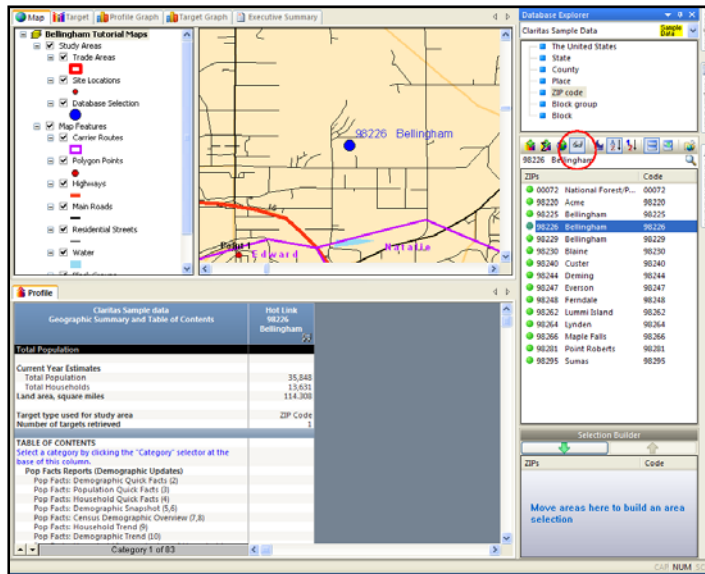
The drill-down procedure can be repeated at any geographical level.

Hot Links

The **Hot Link** feature lets you quickly scan the area list to preview profiles without defining permanent study areas. You can also hot-link areas to the map so that locations selected in the area list are automatically displayed on the map.



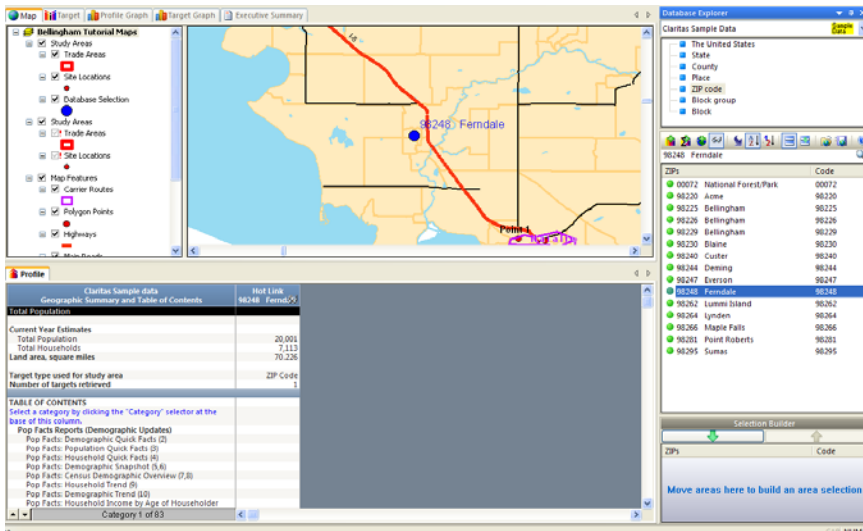
➤ Select the Hot link  icon.



The screenshot shows the software interface with a map of Bellingham. A red dot is placed on the map at ZIP code 98226. The Database Explorer on the right shows a list of ZIP codes, with 98226 Bellingham selected and circled in red. The Profile window at the bottom shows demographic data for ZIP code 98226 Bellingham.

Claritas Sample data		Hot Link
Geographic Summary and Table of Contents		98226 Bellingham
Total Population		
Current Year Estimates		
Total Population	35,848	
Total Households	15,631	
Land area, square miles	114.308	
Target type used for study area		ZIP Code
Number of targets returned		1
TABLE OF CONTENTS		
Select a category by clicking the "Category" selector at the base of this column.		
Pop Facts Reports (Demographic Updates)		
Pop Facts: Demographic Quick Facts (2)		
Pop Facts: Population Quick Facts (3)		
Pop Facts: Household Quick Facts (4)		
Pop Facts: Demographic Snapshot (5,6)		
Pop Facts: Census Demographic Overview (7,8)		
Pop Facts: Household Trend (9)		
Pop Facts: Demographic Trend (10)		
Category 1 of 83		

PCensus creates a split window (see Split Views, page 12), and simultaneously marks the location of the selected area on the map and creates a temporary column for the area in the profile.



The screenshot shows the software interface with a map of Ferndale. A red dot is placed on the map at ZIP code 98248. The Database Explorer on the right shows a list of ZIP codes, with 98248 Ferndale selected. The Profile window at the bottom shows demographic data for ZIP code 98248 Ferndale.

Claritas Sample data		Hot Link
Geographic Summary and Table of Contents		98248 Ferndale
Total Population		
Current Year Estimates		
Total Population	20,001	
Total Households	7,113	
Land area, square miles	70.226	
Target type used for study area		ZIP Code
Number of targets returned		1
TABLE OF CONTENTS		
Select a category by clicking the "Category" selector at the base of this column.		
Pop Facts Reports (Demographic Updates)		
Pop Facts: Demographic Quick Facts (2)		
Pop Facts: Population Quick Facts (3)		
Pop Facts: Household Quick Facts (4)		
Pop Facts: Demographic Snapshot (5,6)		
Pop Facts: Census Demographic Overview (7,8)		
Pop Facts: Household Trend (9)		
Pop Facts: Demographic Trend (10)		
Pop Facts: Household Income by Age of Householder		
Category 1 of 83		

➤ Change the selection in the Area List, and notice how the map and profile columns are updated.


8 Profile a Circular Area (Radius Report)

Objective

Create a Profile for the area within a specified radius of a site.

Background

The “radius” report has long been a favorite method for characterizing the trading area of a business location.

 A **Drive Time** study area (page 37) may provide a more realistic method of defining a trading area than a radius. A radius assumes that customer behavior is controlled by the “straight-line” distance from a location, and does not take into account factors such as bridges or traffic conditions.

To create a circular study area, we must specify the **location** on which the area is centered (typically, a business location) and the **radius range(s)** defining the area.

PCensus provides several methods for specifying a location:

- By entering the **street address** of the location.
- By **pointing** on the map with the mouse.

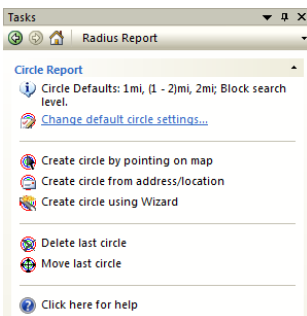
Radius ranges can be defined as:

- **Circle:** the entire area within a specified distance of the location.
- **Ring:** the area between two specified distances from the location (for example between one and two miles).

Steps to Profile Circular Areas by Address

We will select an address in Bellingham, WA for our site location.

 Selection of a location by Pointing is described in the Drive Time example, page 37



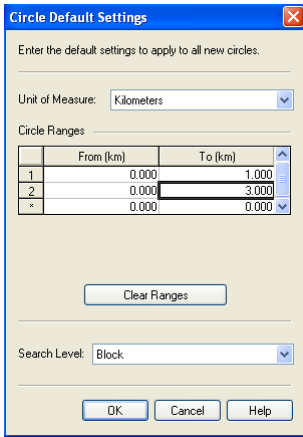
➤ Select  **Profile Radius Study Area** in the PCensus Tasks Window.

➤ Click  **Change default circle settings**.

Default Circle Settings


Many organizations consistently use the same circular patterns to characterize the demographics of diverse site locations; this may typically be three concentric radii (1, 3 and 5 miles) or concentric zones (0 to 1 mile, 1 to 2 miles, 2 to 3 miles).

The **Default Circle Settings** dialog lets you specify the required pattern in advance; it will only need to be re-specified if you wish to create a different pattern.



- Select the **Units of Measure** (miles or km.)
- Enter the distances to define three circular zones, for example:

From	To	
0.0	1.0	Circle with 1 mile radius.
1.0	2.0	Ring – Area between 1 mile and 2 miles radius.
0.0	2.0	Circle with 2 mile radius.

- Select the **Search Level** (normally the smallest area type available in the database).
- Click **OK** to close the dialog.
- Click  **Select Site by Address/location** in the **Radius Report** task pane.

Address Searching using ArcView


ArcView uses **Address Locators** for locating addresses and geocoding. The address location process refers to databases (for example street network files) installed on your computer, but do not require the map to be open for display.

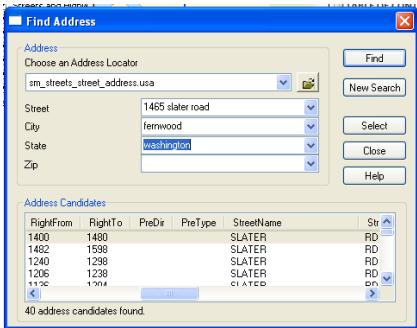
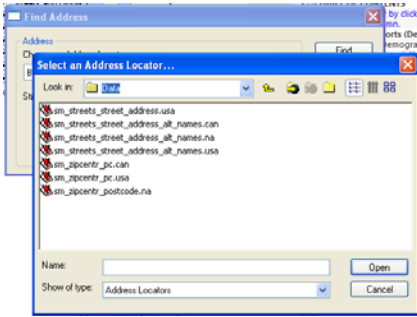
Map products supplied by ESRI (for example, StreetMap USA or StreetMap Pro) include address locators, or you can create them from your own maps using ArcToolBox.



An address locator is a special file (file type .loc) that contains information providing linkage to a street map product. When an address locator is active, supplied street address information is used to compute the latitude/longitude coordinates of the location.

When you are specifying a location for radius or drive time study areas, PCensus will display the Find Address dialog box.

Profile a Circular Area (Radius Report)

Address Locator(s) that have already been used in a PCensus session are selectable from the pull-down list. Otherwise, you must browse for a suitable address locator by clicking the  icon. The Address Locators for StreetMap USA can be found in the StreetMap folder.:

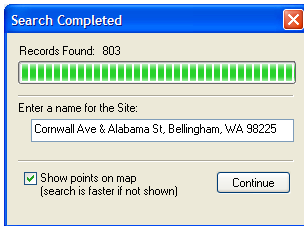


- Type as much of the address as possible (if you do not know the exact spelling, the ZIP code or other components, it may still be possible to resolve the address) and click .
- If the address is ambiguous, a number of candidates may be displayed. Highlight the appropriate entry and click .

PCensus retrieves all the data targets (Blocks) within the defined circles and displays their locations as black dots to indicate the search progress.



PCensus User's Guide



The **Search Completed** dialog provides an opportunity to review the data coverage and to provide an appropriate name for the site.


➤ Click **Continue** to display the profile.

❓ *If you prefer not to have PCensus pause at the completion of a search, select **Options** from the **Tools** menu and uncheck **Wait after search to view points on the map**.*

Pop Facts: Demographic Snapshot (Part 1)	Cornwall Ave & Alabama St, Bellingham, WA 98225 0 - 1 mi	Cornwall Ave & Alabama St, Bellingham, WA 98225 1 - 2 mi	Cornwall Ave & Alabama St, Bellingham, WA 98225 0 - 2 mi
Population			
2013 Projection	15,030	32,031	47,061
2008 Estimate	14,292	29,544	43,836
2000 Census	13,340	25,543	38,883
1990 Census	12,755	20,010	32,765
Growth 2008-2013	5.16%	8.42%	7.36%
Growth 2000-2008	7.14%	15.67%	12.74%
Growth 1990-2000	4.59%	27.65%	18.67%
2008 Estimated Population by Single Race Classification	14,292	29,544	43,836
White Alone	12,540 87.74%	24,362 82.46%	36,902 84.18%
Black or African American Alone	149 1.04%	459 1.55%	608 1.39%
American Indian and Alaska Native	298 2.09%	530 1.79%	828 1.89%
Asian Alone	458 3.20%	1,916 6.48%	2,373 5.41%
Native Hawaiian and Other Pacific Islander Alone	17 0.12%	75 0.25%	92 0.21%
Some Other Race Alone	407 2.85%	1,099 3.72%	1,506 3.44%
Two or More Races	422 2.95%	1,104 3.74%	1,526 3.48%
2008 Estimated Population Hispanic or Latino by Origin	14,292	29,544	43,836
Not Hispanic or Latino	13,499 94.45%	27,342 92.55%	40,841 93.17%
Hispanic or Latino	793 5.55%	2,202 7.45%	2,995 6.83%
Hispanic or Latino by Origin	793	2,202	2,995
Mexican	563 71.02%	1,566 71.08%	2,129 71.07%
Puerto Rican	27 3.41%	100 4.53%	127 4.23%
Cuban	8 0.99%	24 1.08%	32 1.05%

The **Profile** tab contains columns for our three circular areas.

What Can I Do Now?

- **Explore the Profile Browser** to see the various data categories available (page 141).
- **Index the Profile Columns** to compare the study areas to a benchmark area (page 144).
- **Modify your Study Area** (for example by changing the specified radii): click the **Edit/Search Study Area** icon .
- **Add More Study Areas to the Project:** create additional profile columns, either for **Predefined** areas (page 19), for additional **Circular** areas, for **Drive time** areas (page 37) or for arbitrary **Polygons** (page 43).
- **Print the Profile** (page 123).
- **Export the Profile** for use with other software applications (page 127).
- **Customize the Profile** (page 147).
- **Combine Shapes to Create Complex Study Areas** (page 215).

9 Profile a Drive Time Area

Objective

Create a Profile for the area within a specified drive time from a location.

Background

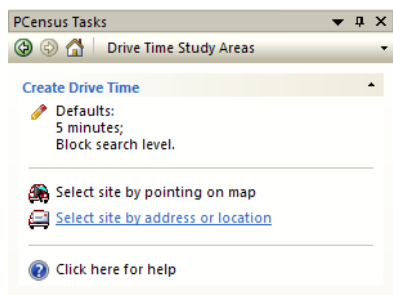
The Drive Time zone is a useful method for predicting the trade areas around a business location. We can define a study area as a polygon containing all the points from which it is possible to drive to our location in a specified number of minutes. The drive time calculation takes into account factors such as one-way streets and road classifications, and we can specify the likely driving speeds for different types of roads within the area, such as Interstate highways or suburban streets.



Note: To profile drive time study areas, you must purchase the optional PCensus drive time module (Freeway). However, all PCensus installations include sample drive time data for the area around Bellingham, WA, so you will always be able to work through the example described in this section.

Steps to Profile a Drive Time Area by Pointing

For this example, we will select our site location by pointing on the map with the mouse cursor.

Selection of a location by Address is described in the Circle example, page 33.

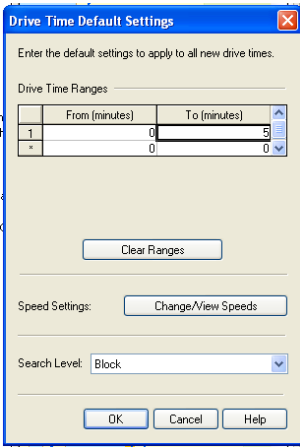


- Select  **Profile a Drive Time Study Area in the PCensus Tasks Window.**
- Click  **Change default drive time settings.**

Default Drive Time Settings

The default circle settings dialog lets you specify the required pattern of drive time zones in advance; it will only need to be re-specified if you wish to create a different pattern.

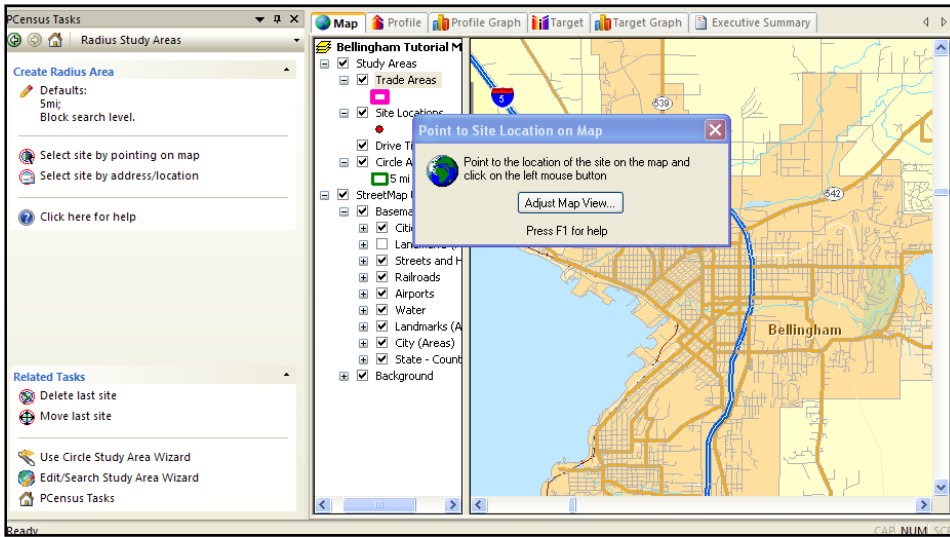
PCensus User's Guide



- Enter the drive times as shown to define 5 and 10 minute drive times.

❓ You can click **Change/View Speeds** to change the expected driving speeds (in miles/hour or km/hour) for each road classification.

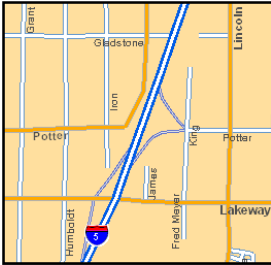
- Select the **Search Level** (normally the smallest area type available in the database).
- Click **OK** to close the dialog
- Click **Select Site by pointing on map** in the **Drive Time Report** task pane.



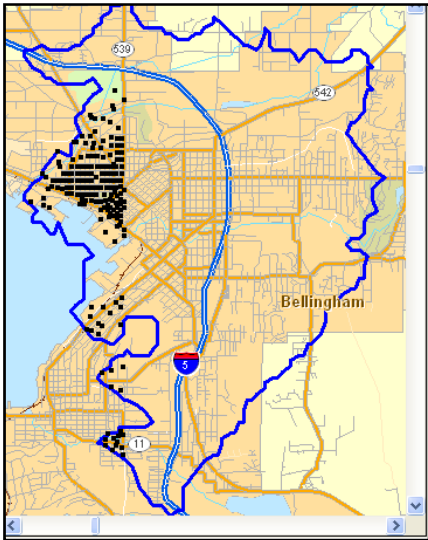
The displayed map view may not show the exact area where your study area is located. If this is the case,

- Click **Adjust Map View...** to access the map navigation tools.
- Use the zoom, pan and other navigation controls to display the required map view. Click **Continue** when finished.

Profile a Drive Time Area



➤ Click the cursor on your site location.



PCensus retrieves all the data targets (Blocks) within the defined areas and displays their locations as black dots to indicate the search progress.

➤ When the search is complete, click to display the profile.


PRIZM NE Household Segments	Site F 0 min - 5 min		Site F 0 min - 10 min	
	Households	%	Households	%
Households by PRIZM NE Segment	10,926		31,228	
Top 10 PRIZM NE Segments				
47 City Startups	17.42%		47 City Startups	13.23%
53 Mobility Blues	15.26%		44 New Beginnings	8.15%
63 Family Thrifts	10.13%		53 Mobility Blues	7.70%
35 Boontown Singles	8.10%		35 Boontown Singles	5.19%
41 Sunset City Blues	6.80%		63 Family Thrifts	5.12%
60 Park Bench Seniors	5.16%		52 Suburban Pioneers	4.94%
46 Old Glories	5.12%		46 Old Glories	4.66%
44 New Beginnings	4.51%		49 American Classics	4.18%
62 Hometown Retired	4.08%		41 Sunset City Blues	4.16%
24 Up-and-Comers	2.74%		12 Britte Lites, L1 City	2.93%
01 Upper Crust	10	0.09%	383	1.23%
02 Blue Blood Estates	8	0.07%	257	0.82%
03 Movers & Shakers	17	0.16%	527	1.69%
04 Young Digerati	0	0.00%	0	0.00%
05 Country Squires	0	0.00%	63	0.20%
06 Winner's Circle	10	0.09%	210	0.67%
07 Money & Brains	0	0.00%	0	0.00%
08 Executive Suites	0	0.00%	160	0.51%
09 Riv. Fish, Small Pond	3	0.03%	54	0.17%

The **Profile** tab contains columns for our drive time areas.

What Can I Do Now?

- Explore the **Profile** to see the various data categories available (page 141).

PCensus User's Guide

- **Index the Columns** to compare the study areas to a benchmark area (page 144).
- **Modify the Study Area** (for example by changing the specified driving times or speeds): click the **Edit/Search Study Area** icon  .
- **Add More Study Areas to the Project:** create additional profile columns, either for **Predefined** areas (page 19), for **Circular** areas (page 33), for additional **Drive time** areas or for **Polygons** (page 43).
- **Export the Profile** for use with other software applications (page 127).
- **Customize the profile** with the data template editor (page 147).
- **Combine Shapes to Create Complex Study Areas** (page 215).

10 Using the Study Area Manager

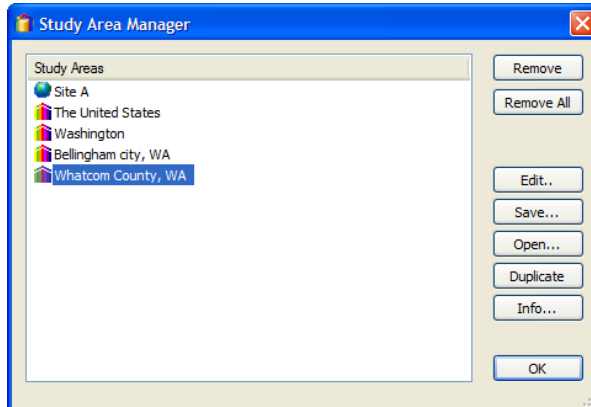
Background

In the preceding chapters, we created a number of study areas that are represented as multiple columns in the profile browser.

Pop Facts: Demographic Quick Facts	The United States	Washington	Whatcom County, WA	Bellingham city, WA	Site A 1 mile ring	Site A 3 mile ring
Population						
2010 Projection	312,383,955	6,669,710	197,420	79,088	14,565	74,947
2005 Estimate	298,021,266	6,311,254	183,747	73,740	13,965	69,769
2000 Census	281,421,906	5,894,121	166,814	67,171	13,270	63,409
1990 Census	248,709,873	4,866,692	127,780	53,834	12,648	51,335
Growth 1990 - 2000	13.15%	21.11%	30.55%	24.77%	4.92%	23.52%
Households						
2010 Projection	117,920,981	2,571,628	76,964	33,450	6,497	31,448
2005 Estimate	112,267,302	2,432,897	71,394	30,998	6,164	29,113
2000 Census	105,480,101	2,271,398	64,446	27,999	5,777	26,253
1990 Census	91,947,410	1,872,431	48,543	21,845	5,257	20,709
Growth 1990 - 2000	14.72%	21.31%	32.76%	28.17%	9.89%	26.77%
2005 Estimated Population by Single	298,021,266	6,311,254	183,747	73,740	13,965	69,769
White Alone	218,545,829 73.33%	5,040,082 79.86%	160,070 87.11%	63,399 85.98%	12,264 87.82%	59,952 85.93%
Black or African American Alone	36,957,270 12.40%	211,644 3.35%	1,538 0.84%	867 1.18%	134 0.96%	802 1.15%
American Indian and Alaska Native	2,719,439 0.91%	100,276 1.59%	3,031 2.74%	1,121 1.52%	289 2.07%	1,131 1.62%
Asian Alone	12,492,949 4.19%	397,957 6.31%	5,943 3.23%	3,699 5.02%	430 3.08%	3,459 4.96%
Native Hawaiian and Other Pacific	469,406 0.16%	28,494 0.45%	324 0.18%	156 0.21%	21 0.15%	158 0.23%
Some Other Race Alone	18,671,432 6.27%	281,026 4.45%	5,205 2.83%	1,876 2.54%	395 2.83%	1,821 2.61%
Two or More Races	8,166,941 2.74%	251,775 3.99%	5,636 3.07%	2,622 3.56%	433 3.10%	2,446 3.51%
2005 Estimated Population Hispanic or	298,021,266	6,311,254	183,747	73,740	13,965	69,769
Hispanic or Latino	43,251,038 14.51%	553,278 8.77%	10,999 5.99%	4,041 5.48%	768 5.50%	3,932 5.64%
Not Hispanic or Latino	254,770,228 85.49%	5,757,976 91.23%	172,748 94.01%	69,699 94.52%	13,197 94.50%	65,837 94.36%

The **Study Area Manager** allows us to selectively remove unwanted areas from our project.

- Click the **Study Area Manager** icon  in the PCensus tool bar.



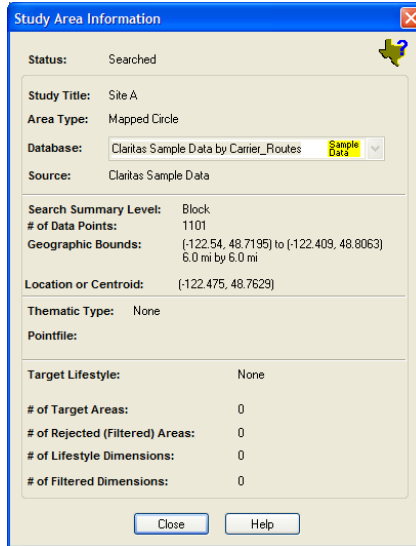
- Select a study area and click the **Remove** button.

The **Study Area Manager** dialog contains additional buttons:

- **Edit:** Change the study area definition and re-search the area.

PCensus User's Guide

- **Save** and **Open**: save the current study area definition so that it can be opened in a new project.
- **Duplicate**: make a copy of the study area that can be edited and displayed alongside the original area.
- **Info**: display the **Study Area Information** dialog.



The screenshot shows a dialog box titled "Study Area Information" with a blue title bar and a close button (X) in the top right corner. The dialog contains the following information:

Status:	Searched
Study Title:	Site A
Area Type:	Mapped Circle
Database:	Claritas Sample Data by Carrier_Routes Sample Data
Source:	Claritas Sample Data
Search Summary Level:	Block
# of Data Points:	1101
Geographic Bounds:	(-122.54, 48.7195) to (-122.409, 48.8063) 6.0 mi by 6.0 mi
Location or Centroid:	(-122.475, 48.7629)
Thematic Type:	None
Pointfile:	
Target Lifestyle:	None
# of Target Areas:	0
# of Rejected (Filtered) Areas:	0
# of Lifestyle Dimensions:	0
# of Filtered Dimensions:	0

At the bottom of the dialog are two buttons: "Close" and "Help".

11 Profile a Traced Polygon Area

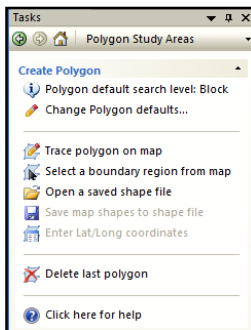
Objective

Create a Profile for the area within a polygon specified by tracing on the map.

Background

Traced polygons provide a flexible method for defining a study area. You may already have local knowledge of the areas where your customers live or you may want to define an area in the vicinity of an established transportation corridor.

Steps to Profile a Polygon



➤ Select  **Profile Polygon Study Area** in the **PCensus Tasks** Window.

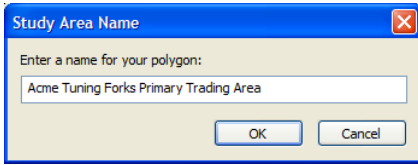
➤ Click  **Trace polygon on map**.



➤ Use the cross-hair cursor (+) to trace a polygon on the map similar to the one shown.

➤ Click on each point in order; when you reach the last point, double-click on it to close the polygon.

PCensus User's Guide



- Enter a suitable title for your polygon area.
- Click **OK**.

The **Profile** tab contains a column for our polygon area.

Consumer Buying Power Sports and Recreation		Acme Tuning Forks Primary Trading Area						
	2005 Aggregate Expenditure Estimate	%	2010 Aggregate Expenditure Estimate	%	2005 Annual Average per Household	2010 Annual Average per Household	Average Annual Growth (%)	2005 Market Index to USA
TOTAL SPECIFIED CONSUMER EXPENDITURES	\$ 331,463,599		\$ 415,523,852		\$ 40,148	\$ 47,592	5.07%	84
SPORTS & RECREATION	\$ 8,703,594	2.63%	\$ 11,586,984	2.79%	\$ 1,054	\$ 1,327	6.63%	75
SPORTS EQUIPMENT	\$ 5,022,063	1.52%	\$ 6,584,173	1.58%	\$ 608	\$ 754	6.22%	75
General Sport/Exercise Equipment	\$ 1,140,818	0.34%	\$ 1,476,856	0.36%	\$ 138	\$ 169	5.89%	84
Bicycles	\$ 385,584	0.12%	\$ 494,147	0.12%	\$ 47	\$ 57	5.63%	99
Camping Equipment	\$ 201,844	0.06%	\$ 271,120	0.07%	\$ 24	\$ 31	6.86%	111
Hunting, Fishing Equipment	\$ 217,666	0.07%	\$ 240,009	0.06%	\$ 26	\$ 27	2.05%	96
Winter Sport Equipment	\$ 145,871	0.04%	\$ 213,239	0.05%	\$ 18	\$ 24	9.24%	116
Other Sports Equipment	\$ 236,902	0.07%	\$ 319,142	0.08%	\$ 29	\$ 37	6.94%	57
Water Sport Equipment	\$ 183,487	0.06%	\$ 225,624	0.05%	\$ 22	\$ 26	4.59%	78
Playground Equipment	\$ 161,836	0.05%	\$ 245,284	0.06%	\$ 20	\$ 28	10.31%	79
Toys Games Hobbies Tricycles	\$ 2,348,056	0.71%	\$ 3,098,752	0.75%	\$ 284	\$ 355	6.39%	65
OTHER RECREATION								
Social/Recreation/Civic Club	\$ 720,419	0.22%	\$ 1,122,052	0.27%	\$ 87	\$ 129	11.15%	69
Fees for Participant Sports	\$ 751,034	0.23%	\$ 900,939	0.22%	\$ 91	\$ 103	3.99%	84
Admission fees for Entertainment	\$ 468,965	0.14%	\$ 584,784	0.14%	\$ 57	\$ 67	4.94%	92
Admission to Sporting Events	\$ 999,471	0.30%	\$ 1,362,585	0.33%	\$ 121	\$ 156	7.27%	102
Fees for Recreational Lessons	\$ 442,578	0.13%	\$ 649,652	0.16%	\$ 54	\$ 74	9.36%	42
Music Instruments/Accessories	\$ 267,629	0.08%	\$ 344,330	0.08%	\$ 32	\$ 39	5.73%	87
Rent/Repair Musical Instruments	\$ 31,434	0.01%	\$ 38,469	0.01%	\$ 4	\$ 4	4.48%	142

What Can I Do Now?

- **Explore the Profile Browser** to see the data categories available (page 141).
- **Index Profile Columns** to compare study areas to a benchmark area (page 144).
- **Add More Study Areas to the Project:** create additional profile columns, either for **Predefined** areas (page 19), for **Circular** areas (page 33), for **Drive time** areas (page 37), or for additional **Polygons**.
- **Print the Profile** (page 123).
- **Export the Profile** for use with other applications (page 127).
- **Customize the profile** with the data template editor (page 147).
- **Combine Shapes to Create Complex Study Areas** (page 215).

12 Profiling Polygons from a Map Layer

Objective

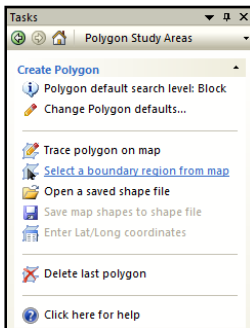
Capture polygons defined in a map layer, and use them to define study areas.

Background

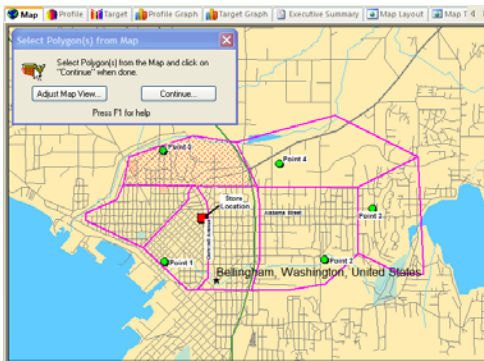
If you have maps that show the areas you need, such as trade areas or school districts, you can select these areas directly and use them as study area polygons. To illustrate this capability, we will use a map outlining the areas assigned to seven Bellingham newspaper carriers (Edward, Natalie, John, Samantha, Eric, Frederick and Margaret).

Steps to Profile a Polygon

- Create a new PCensus project and open the **Bellingham Tutorial Maps** map set in the **Project Setup** pane.



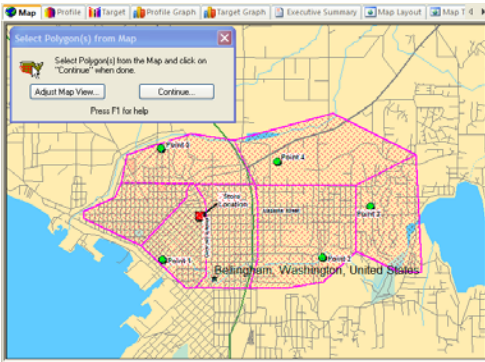
- Click **Select a boundary region from map**




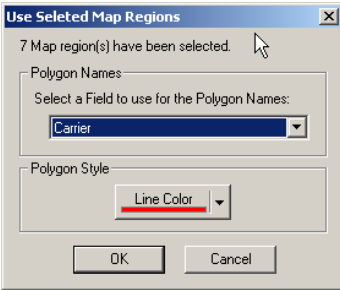
- Click in one of the polygons to select it. The selected polygon will be shaded in red.

🔍 *The floating dialog box provides a control that lets you adjust the map view if necessary.*

PCensus User's Guide

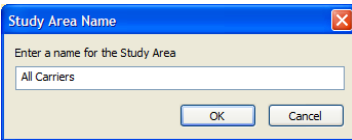


- Press the **Shift** key, and while it is pressed, click the other polygons one at a time to select them.
- Click  in the floating dialog.



The **Use Selected Map Objects** dialog lets us select a data field associated with the map layer to be used for naming our study areas. The **CARRIER** field contains the names of our newspaper carriers (Edward, Natalie, etc.)

- Click .




- Enter a name for the study area.
- Click **OK** to display the profile.

The profile browser contains a column for each of the carrier routes.

Pop Facts: Demographic Quick Facts	All Carriers	John	Samantha	Eric
Population				
2010 Projection	28,324	3,350	3,371	2,953
2005 Estimate	26,022	3,335	3,267	2,930
2000 Census	23,201	3,336	3,154	2,926
1990 Census	19,550	3,433	2,999	2,980
Growth 1990 - 2000	18.68%	-2.85%	5.18%	-1.83%
Households				
2010 Projection	11,836	1,474	1,521	1,335
2005 Estimate	10,873	1,446	1,453	1,314
2000 Census	9,694	1,422	1,379	1,300
1990 Census	7,977	1,404	1,290	1,292
Growth 1990 - 2000	21.52%	1.30%	6.90%	0.62%
2005 Estimated Population by Single Race Classification	26,022	3,335	3,267	2,930
White Alone	22,215 85.37%	3,071 92.07%	2,840 86.93%	2,563 87.49%
Black or African American Alone	327 1.26%	23 0.68%	40 1.22%	12 0.41%
American Indian and Alaska Native Alone	485 1.86%	34 1.03%	104 3.18%	61 2.08%
Asian Alone	1,140 4.38%	58 1.75%	75 2.30%	81 2.78%
Native Hawaiian and Other Pacific Islander Alone	63 0.24%	0 0.01%	2 0.07%	6 0.21%

What Can I Do Now?

- PCensus provides several other methods for selecting map objects. For example, you can pick **Select...** from the **Map** menu to select objects from a map layer that satisfy specified criteria. To use these options, you must work directly in the Map tab (i.e. without using the study area wizard). When you have selected the required objects, click the **Use Selected** icon  in the PCensus toolbar to start the wizard process.
- The “use selected map objects” feature is very powerful. It can also be used with selected “point” objects on a map, for example representing store locations or residences. When point objects are used, PCensus starts the **Batch Sites Wizard** (page 223) to define circles or drive time areas of specified size around each location.
- **Use selected polygons to create User Defined Target Areas** (page 229).

13 Using ArcGIS Maps

Objective

Use Maps from other sources in PCensus.

Background

In the preceding chapters, we defined a geographical study area using a local street map for Bellingham Washington.

For real projects, we would normally use other maps, for example StreetMap USA which is part of the ESRI Data & Maps package supplied with ArcView.

PCensus can use maps or map layers supplied in the standard ESRI .mxd, .lyr or .shp formats, provided that these maps use the latitude/longitude coordinate system. Maps using other coordinate systems must be transformed to a compatible system using the tools provided by ArcView.

Once a map has been used in PCensus it is registered as a PCensus “map set” so that it can be easily recalled for future projects with all included map layers. The current zoom level and field of view are recorded in the map set, so when the map set is reused, it will immediately display the same geographical area that was visible when the map set was created.

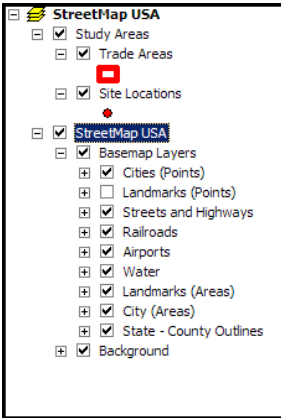
It is possible to create many map sets that refer to the same underlying maps. For example, if you are using a regional map such as the StreetMap extension, you can create separate map sets for all the regions that are of interest to you.

Using StreetMaps

To follow the steps in this chapter, you must install and register the **StreetMaps™ USA** extension. You will also need maps from the **Data & Maps** package, which includes Census and ZIP code boundaries.

The StreetMaps USA MXD document can be opened in the Project Setup task pane in the usual way by clicking **Open Additional Map Layers** in the **Project Setup** Task Window.

PCensus User's Guide



The Legend Window shows all the “layers” in the map and lets you control their visibility. Use the check boxes to turn specific layers on and off, and click the + and – boxes to expand or collapse the various groups. You can change the order of layering by dragging with the mouse.


Note that the **Trade Area** and **Site Locations** layers are added by PCensus to display user-defined study areas (circles and polygons). These layers cannot be changed.

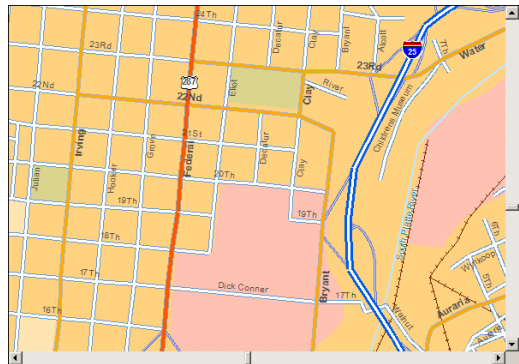
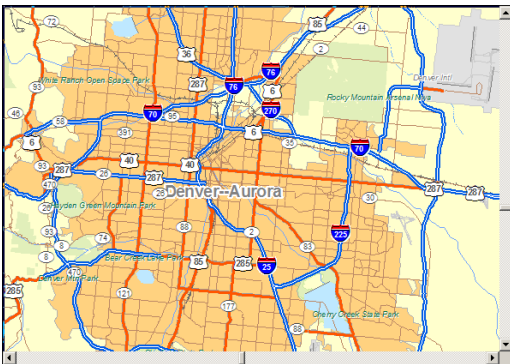
Changes to the StreetMap USA group will not be preserved by PCensus; however, you can create new versions by editing in ArcMap.

The Mapping toolbar provides icons that allow you to navigate to different parts of the map window.



Note: the toolbar is usually “docked” at the right-hand side of the map window, but it can be dragged to other locations.

Try using the ,  and  to zoom in to the Denver area. As you zoom in, more and more detail is displayed, until you can see labeled streets



Zoom back to a view showing all of Denver (similar to the map on the left).

Assuming that we expect to need a map of Denver as a basis for future PCensus projects, we can save this map view as a map set (see Appendix 4 - Creating a Map Set).

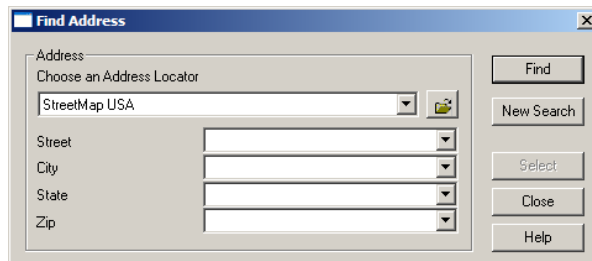
Using ArcGIS Address Locators


ArcGIS uses Address Locators for locating addresses and geocoding. The address location process refers to databases (for example street network files) installed on your computer, but do not require the map to be open for display.

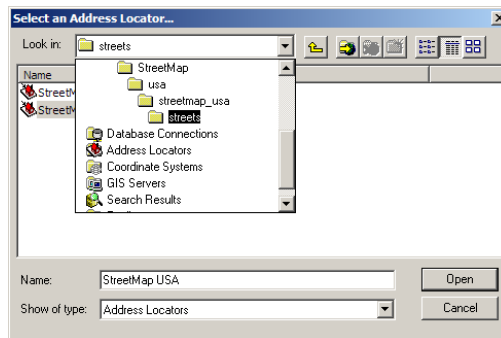
Map products supplied by ESRI, for example StreetMap USA or StreetMap Pro, include address locators, or you can create them from your own maps using ArcToolBox.

An address locator is a special file (file type .loc) that contains information providing linkage to a street map product. When an address locator is active, supplied street address information is used to compute the latitude/longitude coordinates of the location.


The address-searching functions of PCensus, for example specifying a location for radius or drive time study areas, display the **Find Address** dialog box.

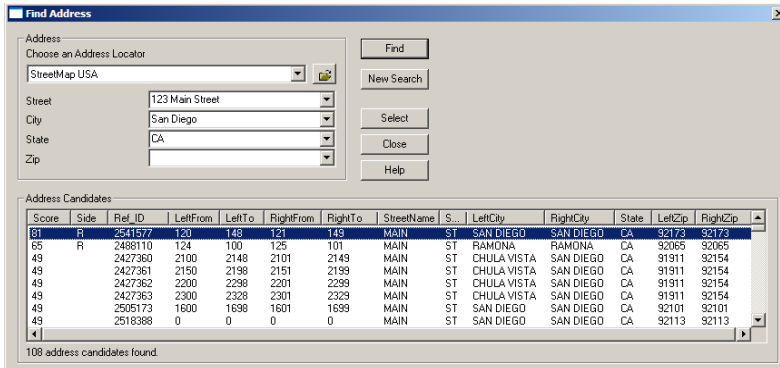


Address Locator(s) that have already been used in a PCensus session are selectable from the pull-down list. Otherwise, you must browse for a suitable address locator by clicking the  icon. The Address Locators for StreetMap USA can be found in the StreetMap folder:



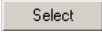
PCensus User's Guide

Type as much of the address as possible (if you do not know the exact spelling, the ZIP code or other components, it may still be possible to resolve the address) and click .



The "Find Address" dialog box contains a form for address input and a table of candidates. The form includes a "Choose an Address Locator" dropdown set to "StreetMap USA", a "Street" dropdown set to "123 Main Street", a "City" dropdown set to "San Diego", a "State" dropdown set to "CA", and an empty "Zip" dropdown. Buttons for "Find", "New Search", "Select", "Close", and "Help" are present. The "Address Candidates" table below has columns for Score, Side, Ref_ID, LeftFrom, LeftTo, RightFrom, RightTo, StreetName, S..., LeftCity, RightCity, State, LeftZip, and RightZip. The first row is highlighted.

Score	Side	Ref_ID	LeftFrom	LeftTo	RightFrom	RightTo	StreetName	S...	LeftCity	RightCity	State	LeftZip	RightZip
81	R	2421577	120	123	124	125	MAIN	ST	SAN DIEGO	SAN DIEGO	CA	92172	92172
55	R	2498110	124	100	125	101	MAIN	ST	RAMONA	RAMONA	CA	92065	92065
49		2427360	2100	2148	2101	2149	MAIN	ST	CHULA VISTA	SAN DIEGO	CA	91911	92154
49		2427361	2150	2198	2151	2199	MAIN	ST	CHULA VISTA	SAN DIEGO	CA	91911	92154
49		2427362	2200	2298	2201	2299	MAIN	ST	CHULA VISTA	SAN DIEGO	CA	91911	92154
49		2427363	2300	2328	2301	2329	MAIN	ST	CHULA VISTA	SAN DIEGO	CA	91911	92154
49		2595173	1600	1698	1601	1699	MAIN	ST	SAN DIEGO	SAN DIEGO	CA	92101	92101
49		2518388	0	0	0	0	MAIN	ST	SAN DIEGO	SAN DIEGO	CA	92113	92113

If the address is ambiguous, a number of candidates may be displayed. Highlight the appropriate entry and click .

What Can I Do Now?

Experiment with the features of the map window to change the contents and appearance of maps.

14 Use “Data Fit” to Define a Circle or Drive Time Based on Demographics

Objective

Find an area (radius or drive time) that contains about 500 dwellings built before 1939.

Background

In the examples we have seen so far, we have created circles or drive time areas specified in miles or minutes respectively. Sometimes we may not know in advance what the physical dimensions of our area should be; instead, we may want to profile an area that contains a specified population, or number of households, and let PCensus determine the optimum radius or drive time.

The **Data Fit** method lets you specify a variable to be used, and the value for that variable for which a circle or drive time area is to be generated, for example:

- A drive time zone containing a population of 10,000 people.
- A circle containing 500 dwellings built before 1939.

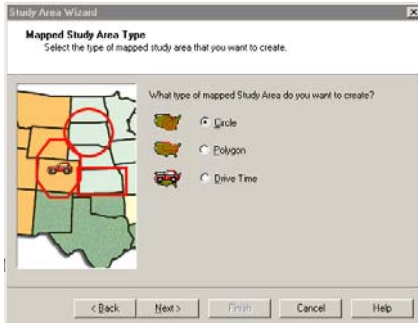
To create a **Data Fit** circle, PCensus generates a series of circles (or drive times) of different sizes and evaluates the selected variable for each one. The optimum size is determined by a “convergent” process: once it has been determined that one radius is too large and that another is too small to provide the required result, intermediate circles are tried until a suitable approximation has been obtained.



An important consideration in using the **Data Fit** method is that it should only be used with variables that would reasonably be expected to be proportional to the size of the study area; for example, a variable like Average Income cannot be used, as it is unlikely to be proportional to the radius of the study area.

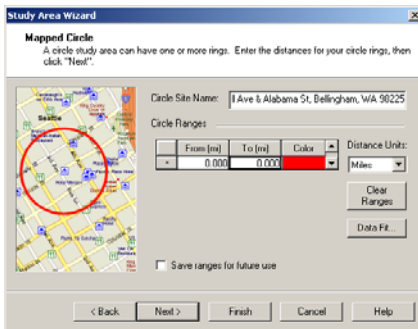
The specified data value is unlikely to be matched exactly, because the inclusion or exclusion of a single database record invariably changes the result by more than one unit. The **Data Fit** process includes a “tolerance” setting to specify how closely we wish to match the required value. A small tolerance value may greatly increase the number of iterations required.

Steps to Profile a Data Fit Circle

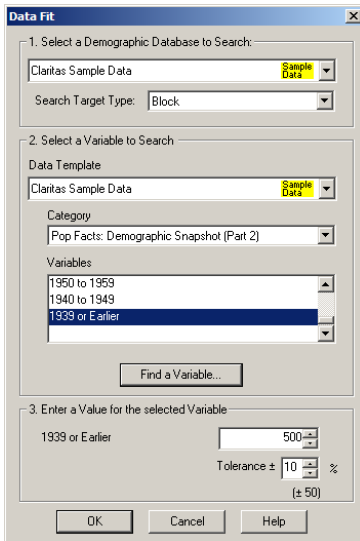
Note: The Data Fit Feature is only available when you define study areas using the PCensus Wizards.



- Switch to the Wizards task pane and click  **Run Wizards.**
- Click  **Create Mapped Study Area.**
- Select **Circle** and click **Next >**.
- Define a circle based on the **Cornwall Avenue** and **Alabama Street** location and advance to the **Mapped Circle** dialog. Do not enter any circle ranges.



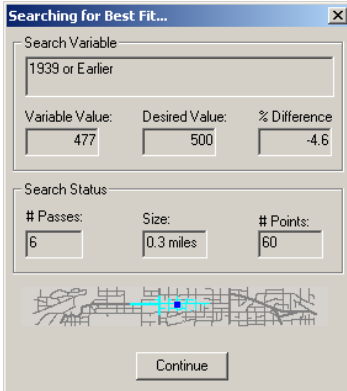
- Click **Data Fit...**



- Select the **Claritas Sample Data.**
- Set the Search **Target Type** to **Block.**
- Note:** This sets the level at which the database will be searched when testing circles. Use **Block** for small areas to increase resolution, or **Block group** for larger areas to increase performance.
- Set the **Data Template** to **Claritas Sample Data.**
- Use the **Find Variable...** button (page 143) to find the data item **1939 or Earlier** (in the **Demographic Snapshot** category).
- Set the required value for the selected variable to **500.**
- Note:** The default **Tolerance** value of **10%** will be suitable for most purposes.

- Click **OK**.

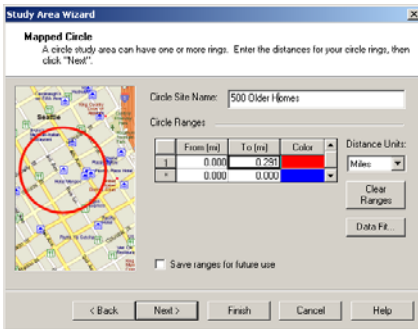
Use “Data Fit” to Define a Circle or Drive Time Based on Demographics



The **Searching for Best Fit** dialog monitors the progress of the analysis. In the example, 6 passes (candidate circles) were tried, the final one giving a result of 477 units, which is within the specified tolerance of 10%.

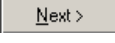
Note: In this case, setting the tolerance to a lower value (e.g. 1%) will have no effect on the outcome, due to the finite size of the retrieved blocks.

Click 



The **Data Fit** circle matching our criteria has a radius of 0.291 miles.

➤ Enter a suitable site name reflecting the significance of the area, for example **500 Older Homes**.


➤ Click , and continue to create the profile as usual.

PCensus displays the finished profile.

Pop Facts: Demographic Snapshot (Part 2)		500 older homes 0 - 0.310686 mi
2005 Estimated Housing Units by Units in Structure*		1,058
1 Unit Attached	49	4.65%
1 Unit Detached	710	67.14%
2 Units	81	7.61%
3 to 19 Units	125	11.85%
20 to 49 Units	2	0.21%
50 or More Units	90	8.54%
Mobile Home or Trailer	0	0.00%
Boat, RV, Van, etc.	0	0.00%
Dominant structure type	1 Unit Det...	
2005 Estimated Housing Units by Year Structure Built		1,058
1999 to March 2005	30	2.88%
1995 to 1998	6	0.53%
1990 to 1994	35	3.29%
1980 to 1989	30	2.83%
1970 to 1979	67	6.29%
1960 to 1969	91	8.64%
1950 to 1959	124	11.76%
1940 to 1949	156	14.74%
1939 or Earlier	539	50.94%
2005 Estimated Median Year Structure Built**	1,939	
Dominant Year Structure Built	1939 or E...	

What Can I Do Now?

- Try using the **Data Fit** method for drive times instead of circles.

 *Note In small areas, this may result in significant divergence from the required values, as drive times are calculated to the nearest minute. In practice, the difference between, say, a four-minute and five-minute drive time would be almost meaningless, but could represent a large difference in included population.*

15 Thematic Mapping with Boundaries


Background

Thematic boundary maps let us visualize the value of any variable by coloring regions on a map according to the value of a variable, highlighting areas where the value is high or low.

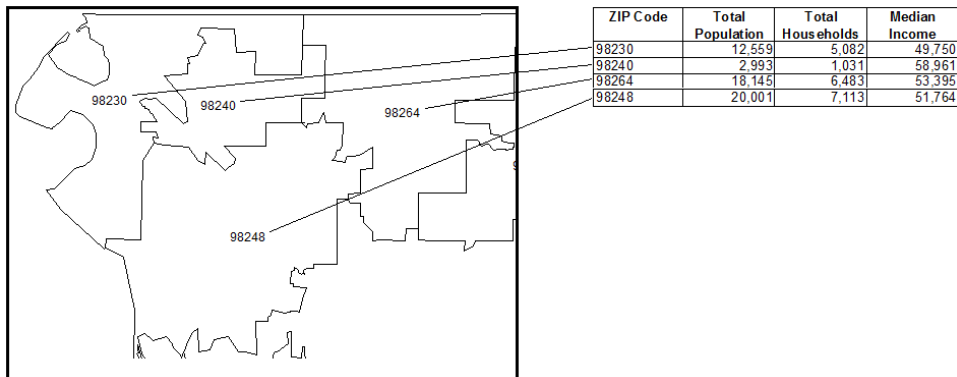
PCensus databases are not intrinsically connected to any map layers, so we must tell PCensus how the data contained in each database record (target) will be associated with a map boundary. There are two ways that we can define this association:

- Match a “code” common to the data target and the map boundary. Typical examples of codes would be a ZIP code (5 characters) or a block group code (12 characters). This method is called “Code Matching”.
- Find the target record(s) whose centroids (defined by latitude and longitude) are located in each boundary. This method is called “Point-in-Polygon”.

Matching Data Points to Boundaries by Code Matching

 This method should always be used when there is an exact correspondence of codes between boundaries and database targets

The simplest case occurs when there is a one-to-one correspondence between database records and the mapped boundaries. For example, if the database contains exactly one record for every ZIP code, and the map layer contains corresponding boundaries for each ZIP code.



PCensus User's Guide

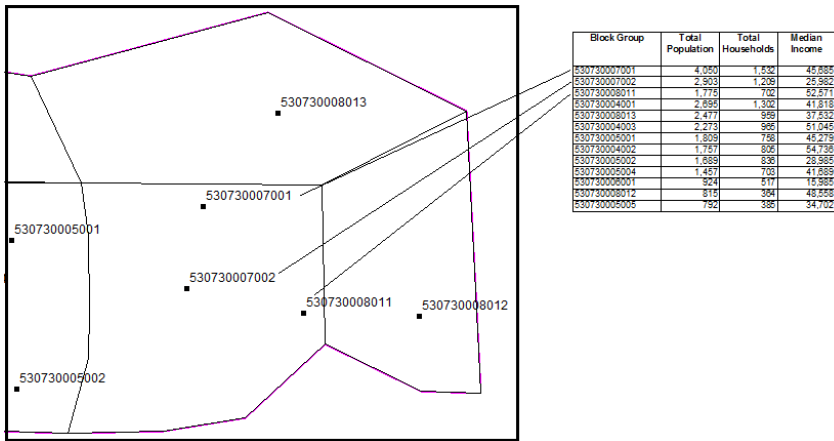
In this case, PCensus can transfer the data values to the map by matching the database target codes to the map layer codes.

See Chapter 16, Create a Thematic Boundary Map, for an example of data matching by code.

Matching by Point-In-Polygon

i This method should only be used when there is no matching code between boundaries and database geography.

This is the most generalized method, as it requires no structural relationship between the targets and the boundaries. For example, block group targets from the PCensus database can be re-aggregated to shade areas representing school districts or trade areas.




In the illustration, a map boundary contains three block group centroids; PCensus must compute an aggregate value from the three block group records, and associate the resulting value with the boundary.

If the data value to be thematically mapped represents “count” data such as Total Population or Total Households, the computation is straightforward: the value assigned to the mapped region will be the total of the values of the contained targets.

If the data value does not represent a count, totaling the values will not be appropriate; for example, if we total the “median income” values of the three block groups in the illustration, the result will be meaningless. In this case, PCensus must average the values of the three block groups to compute a useful value.

Thematic Mapping with Boundaries

PCensus cannot automatically determine whether it is appropriate to total or to average a particular variable; you are required to indicate whether the selected value should be handled as a “count” (to be aggregated) or a “ratio or percentage” (to be averaged).


 ***Use of the Point-in-Polygon method for thematic mapping is not recommended, especially when mapping non-additive variables such as medians. Instead, you are encouraged to use the PCensus Custom Geography feature (see Chapter 34) to create a new target type corresponding to your mapped boundaries. This approach will allow the use of the preferred code-matching method for all thematic mapping tasks.***

16 Create a Thematic Boundary Map

Background

This chapter describes the method for creating a thematic boundary map when there is a one-to-one correspondence between mapped boundaries and the target records available in a PCensus database. For example, to create a map in which ZIP Code boundaries are shaded according to median income, you must have installed:

- A PCensus database containing data at the ZIP Code summary level.
- A map layer (.lyr file) or shape file (.shp file) of ZIP Code boundaries of similar vintage to the database.

 *Note: ZIP Code areas can change from year to year in response to changes in the postal delivery system. This can cause problems if maps of an inappropriate vintage are used for thematic mapping. Other summary levels, such as block groups and census tracts rarely change between censuses.*

When a suitable correspondence between map and database exists, thematic mapping uses the “Code-Matching” process described in Chapter 15 to assign data to the regions in the map layer.

In previous versions of PCensus, this meant that thematic mapping using boundary types not represented in the database required re-aggregation of data assigned by the “Point-in-Polygon” method. However, the Custom Geography feature introduced in PCensus version 9 (see chapter 34) allows us to create thematic maps for any type of boundary using the code-matching method.

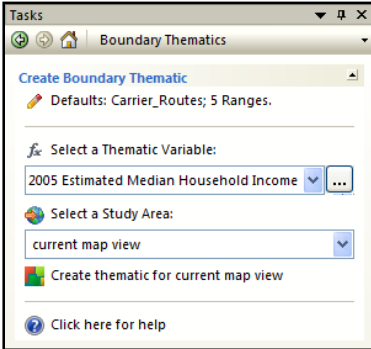
Steps to Create a Thematic Boundary Map

Creating a thematic map requires the following choices:

- The level of geographic detail required, and the method to be used for representing data on the map (thematic defaults).
- The variable to be mapped.
- The extent of the area to be mapped (i.e. the study area).


Set the Thematic Mapping Defaults

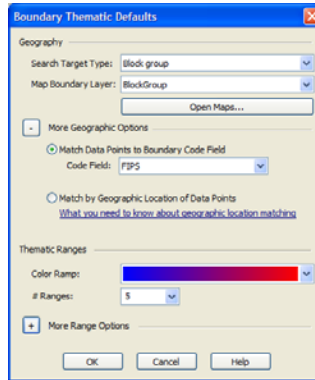
The **Boundary Thematic Defaults** dialog box lets you specify how data will be applied to the map. The settings that you make for a specific combination of maps and databases are “remembered” by PCensus between sessions, so it is not normally necessary to change them for each new map.



- Start a project using the **Bellingham Tutorial Map Set**.
- Open the **Boundary Thematics** task pane.


The current settings are summarized in an informational entry in the task pane, for example:

- Click  **Defaults:** to display the **Boundary Thematic Defaults** dialog box.



The **Geography** section is used to specify how the data records in the PCensus database will be associated with boundaries in a map layer:

- **Search Target Type** selects the geographic level to be used (based on levels available in the current database).
- Select **Block group** in the **Search Target Type** list.
- **Map Boundary Layer** selects the map layer containing boundaries to be thematically shaded.

 *The pull-down lists all currently open map layers. If no suitable layer is open, click **Open Maps...** to access additional map files.*

Create a Thematic Boundary Map

- Select the **Block group** layer from the **Map Boundary Layer** list.

The block group boundaries in the map layer will correspond to the target records representing block groups in the PCensus database.

Every block group in a PCensus database is identified by a unique twelve-digit “FIPS” code.

❓ See Appendix 2 – Census Geography for descriptions of the identifying codes associated with different types of target areas.

Similarly, every block group boundary represented in the map layer has an associated code. Depending on the source of the map, the name of the data field containing the code may vary (it could be called “**Code**”, “**FIPS**”, “**BG**” or other variants.)

- Under **More Geographic Options**, select **Match Data Points to Boundary Code Field**.

❓ The option **Match by Geographic Location of Points** is provided for compatibility with previous PCensus versions to allow point-in-polygon matching. Its use is not recommended.

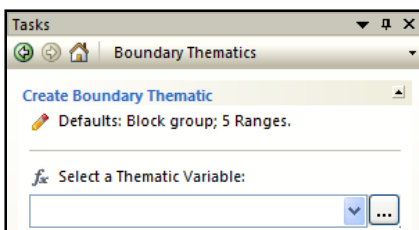
- Select **FIPS** from the pull-down list (this is the code field used in the Block Group sample map).


The remaining settings in the Boundary Thematics Defaults dialog box allow you to control the appearance of the generated thematic map and its associated legend, including color scheme and the number of discrete ranges to be displayed.

- Click OK to close the **Boundary Thematic Defaults** dialog box.

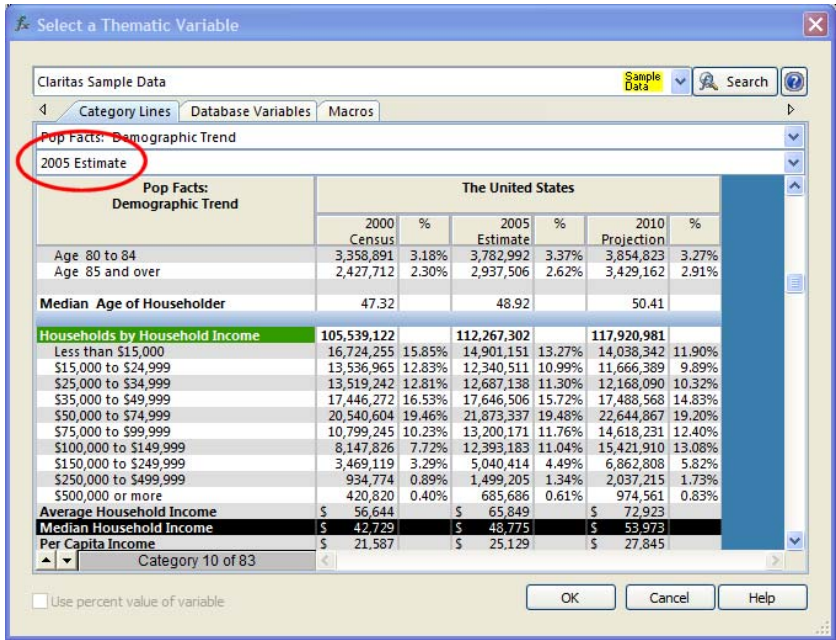
Select the Variable to be Displayed in the Thematic Map

Any variable in the current database can be used to create the thematic map. The **Select a Thematic Variable** dialog box lets you pick a variable from any category.



- Click the  box next to the **Select a Thematic Variable** list.

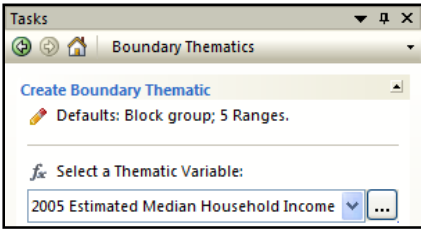
PCensus User's Guide



➤ Select the variable to be used for thematic mapping, for example **Median Household Income**.

❗ If the selected category contains multiple data columns, (as illustrated for the **Demographic Trends** category) select the column containing the required variable (**2005 Estimate**).

➤ Click OK to return to the **Boundary Thematic** task pane.



➤ The selected variable has been added to the **Select a Thematic Variable** list.

❗ The **Select a Thematic Variable** list contains a list of recently used variables that can be selected for future maps.

Select the Area to Map

The term “study area” refers to our geographic area of interest. Study areas include any of the area types described in the preceding chapters:

- Predefined study areas (states, counties, ZIP codes, etc.)
- Circular areas.
- Drive time areas.
- Polygon areas.

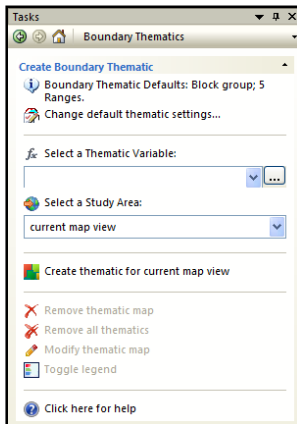
Create a Thematic Boundary Map

If you have already defined a study area during the current PCensus session, it can be used to set the geographic limits of your thematic map.


Alternatively, if you have not defined a study area, you can create a thematic map that covers the area currently displayed in the map window. We will use this capability in the example that follows.



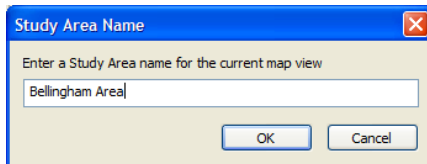
- Use the Navigation tools to adjust the map view to the area that you wish to cover with the thematic map.



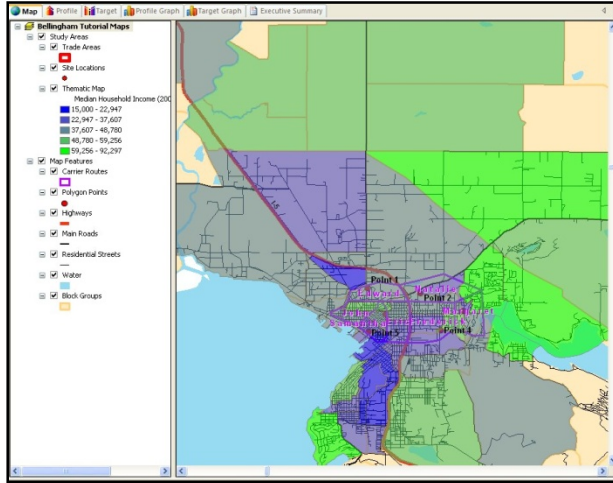
- Select **Current Map View** in the  **Select a Study Area** list.

 *If your project contains other study areas (e.g. predefined areas, radius areas, etc.), they will appear in the list. You can use them to define the limits of your thematic map.*

- Click  **Create Thematic for Current Map View**.



- Enter a title that describes the area to be mapped and click **OK**.



The thematic map appears in the map window with the corresponding legend in the ArcView layer control pane.

Note that the colored areas are opaque, and they obscure the underlying map layers.

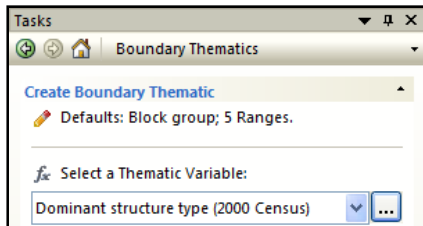
- Right-click the thematic layer in the legend.
- Click **Layer Transparency** and select a suitable transparency level.



🔗 *Alternatively, you can change the layer order by dragging to expose the underlying layers.*

Mapping “Discrete” Values

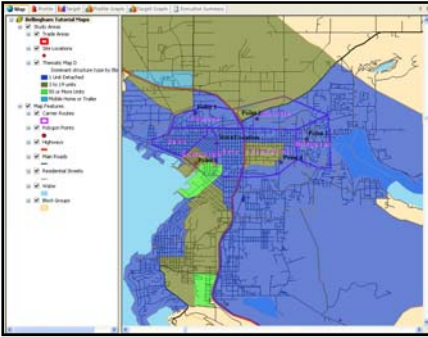
In the example above, we created a thematic map by breaking the distribution of numerical data values into ranges, and assigning colors to the map areas corresponding to each range.

The “Dominant Group” data type does not produce a numerical result; instead it assigns a text description to each area.



- Click the  box next to the **Select a Thematic Variable** list.
- Select **Dominant structure type** from the **Housing Units by Value** category.
- Click  **Create Thematic for Bellingham Area**.

Create a Thematic Boundary Map



PCensus automatically assigns colors to each of the possible values of the variable.

17 Create a Thematic Point Map

Objective

Create a thematic point map for the United States with colored dots representing the median for each state.

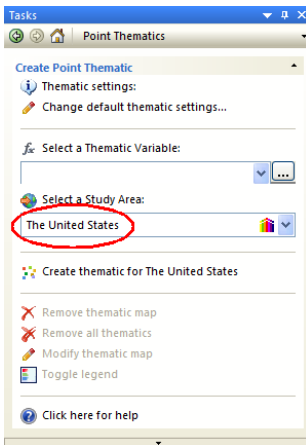
Background

Thematic Point maps provide a simple method to display data on a map by creating colored dots at the centroid of each target contained in a PCensus study area. This method can be used even if no corresponding boundary map is available. A thematic point map can be created for any target type present in a PCensus database.

The disadvantage of the thematic point map is that it does not delineate the boundaries of the colored areas.

Steps to Create a Thematic Point Map

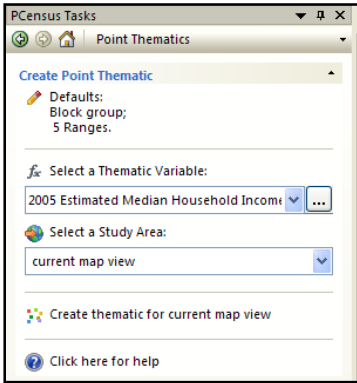
? A thematic point map can be created for an existing study area, or for the current map view.



- Define a study area for **The United States**, as described on page 19.
- Open the **Point Thematics** task pane.
- Select the Study Area **The United States**.

? Alternatively, we could zoom the map view to display the entire country and select **Current Map View** as the study area.

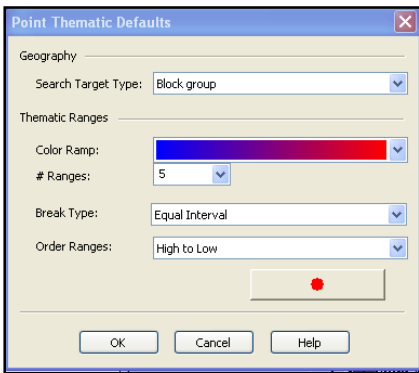
PCensus User's Guide



- Select **Median Household Income** in the **Select A Thematic Variable** list.

❓ *The **Select a Thematic Variable** list contains “favorite” variables that you have used in previous projects. Select **<more variables>** to add entries from the **Formula Reference** list.*

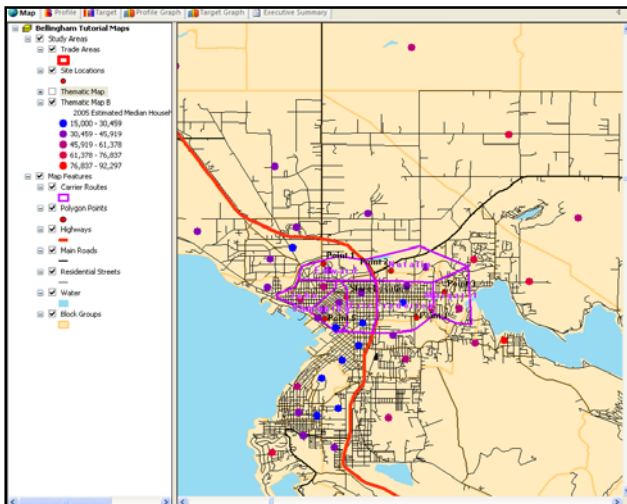
- Click **Create thematic for current map view**...



The Point Thematic Defaults dialog box provides settings that affect the appearance of the map.

- Select **Block Group** as the **Search Target Type**.
- Click **OK**
- Click **Create Thematic for the Current Map View**.

PCensus displays the finished thematic map, with a legend identifying the values identified by each color.



18 Create a Dot Density Map


Objective

Create a thematic map of the United States in which the density of dots in each state represents the population of the state.

Background

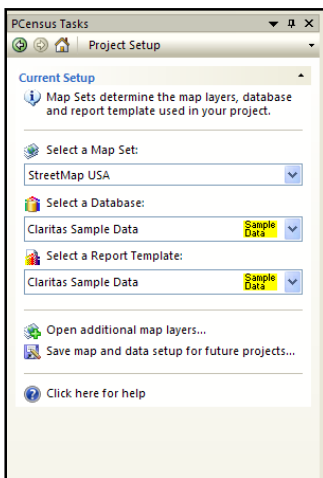
A dot-density map associates the value of a database variable (for example, population) with boundaries in a map layer, and then shades the map layer with randomly spaced dots, the density of which represents the value of the variable.

To create a dot-density map, you must open a suitable boundary map layer. In the example below, we will use a boundary map of the United States. In principal, this method can be used with almost any type of boundary; you must select a suitable target type that corresponds to the areas in the map.

 *The Dot Density map is an advanced map that is not currently available as a specific PCensus “task”. To create this type of map, you must use the Mapping Wizard that guides you through the required series of choices.*

Steps to Create a Dot Density Map

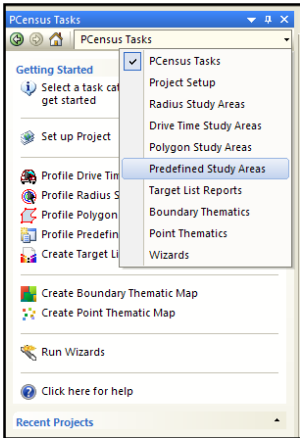
 *This tutorial requires the installation of **StreetMap USA** from your **ESRI Data & Maps and StreetMap USA DVD**.*



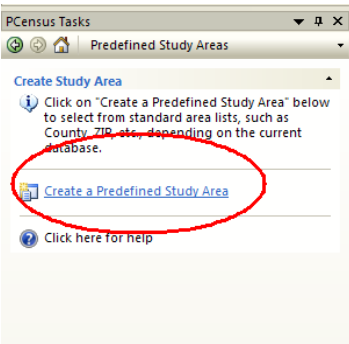
➤ From the **Project Setup** task pane, select **open additional map layers...**

➤ Open **StreetMap USA** from the ESRI directory where it is saved

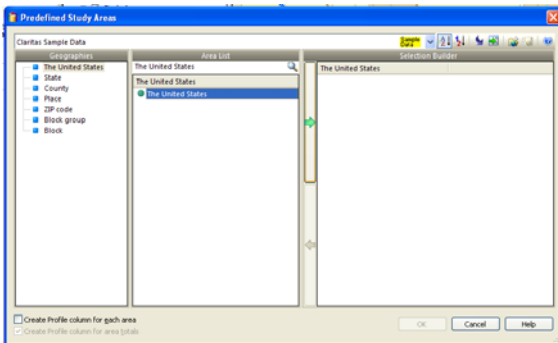
PCensus User's Guide



➤ Before you can create the Dot Density map, you will have to define a predefined study area for all of the US. Select the **Predefined Study Areas** task from the **PCensus Tasks** drop-down menu bar.

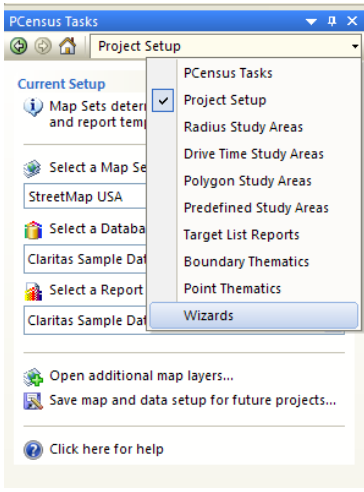


➤ Click on **Create a Predefined Study Area**

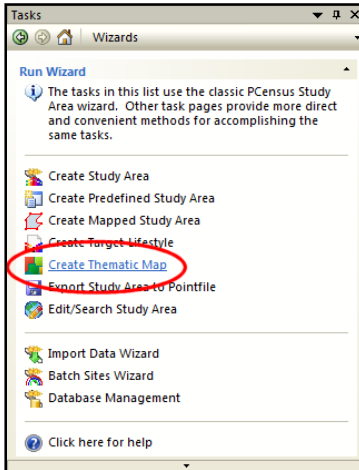


➤ Add **United States** to the **Selection Builder** as a predefined study area

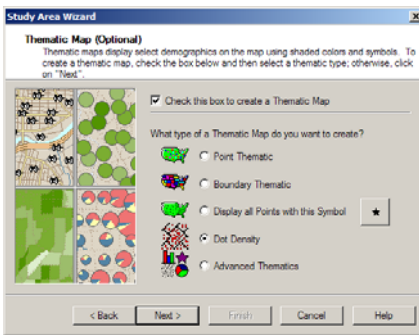
Create a Dot Density Map



Select **Wizards** from the **PCensus Tasks** drop-down menu bar.



Select **Create Thematic Map** from the **Wizards** page.

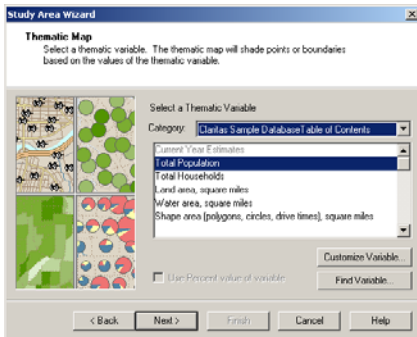


Check the box Check this box to create a Thematic Map .

Select **Dot Density**.

Click .

PCensus User's Guide

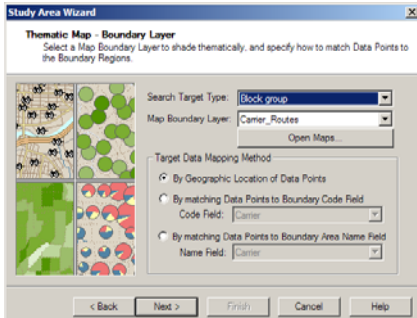


- Select **Total Population** in the list of variables.
- Click **Next >**.



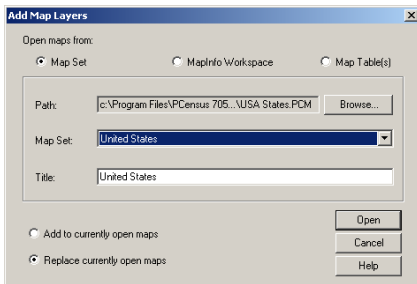
- Select **Count or total**.
- ❗ *PCensus uses this selection to determine whether values should be aggregated across boundaries or averaged. It is only required when the point-in-polygon method is used to assign data to boundaries, resulting in more than one data point per boundary.*

- Click **Next >**.



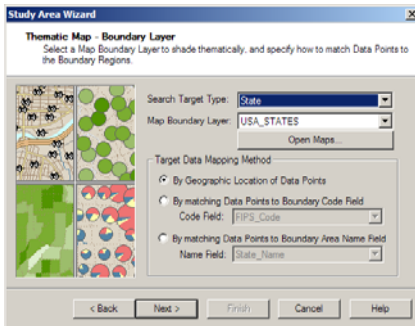
- ❗ *Before we can continue, we must open a suitable map to define our regions.*

- Click **Open Maps...** to display the **Open Maps** dialog box.

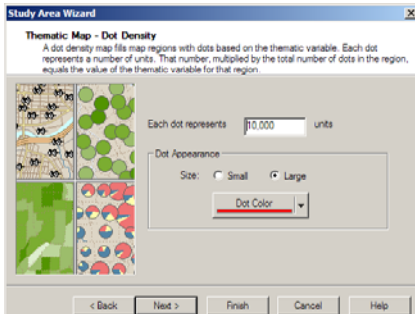


- Select the Map Set **United States**.
- Click **Open** to return to the **Thematic Map** dialog box
- Click **Next >**.

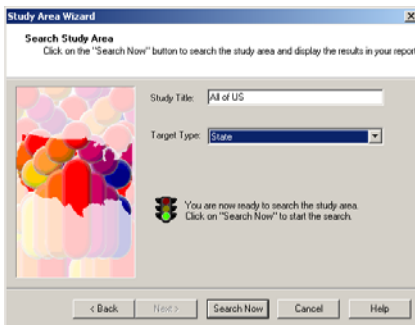
Create a Dot Density Map

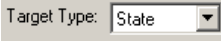
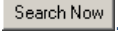



- Select the Target Type “State” and the Map Boundary Layer “USA_STATES”.
- Click .



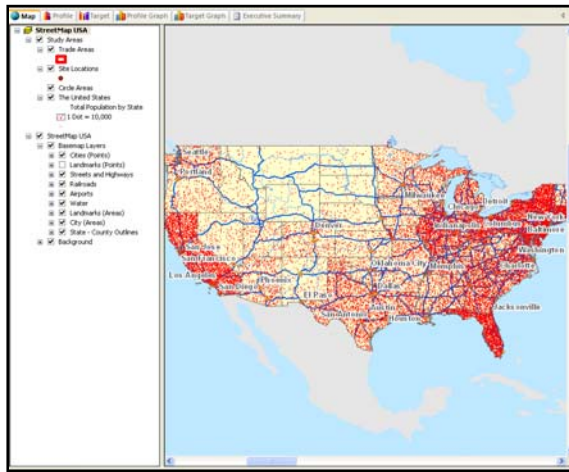
- Click .



- Select  to indicate that we will be mapping state areas.
- Click .
- When the search is complete, click  to close the progress indicator.
- Zoom in slightly to see the refreshed map

PCensus User's Guide

PCensus displays the finished thematic map.



19 Create an Advanced Thematic Map

Objective

Use the Advanced Thematic Mapping feature to create a “pie chart thematic map” showing the proportions of racial groups.


Background


The **Advanced Thematic** feature provides full access to the ArcView thematic mapping process, which creates complex thematic maps and allows comprehensive control over the methods used to apply data to the map.

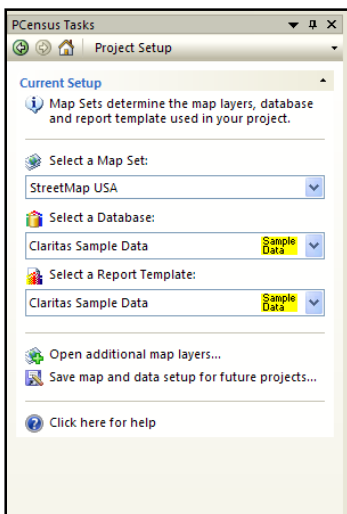
For complete information on using the Data Mapping Wizard, please refer to the ArcView system documentation.

Steps to Create an Advanced Thematic Map

➤ Click  **Run Wizards** in the Task pane.

Start the  **Create Thematic Map** wizard, as described in Chapter 18, and follow the Wizard steps until the **Lifestyle Target List (optional)** dialog box is reached.

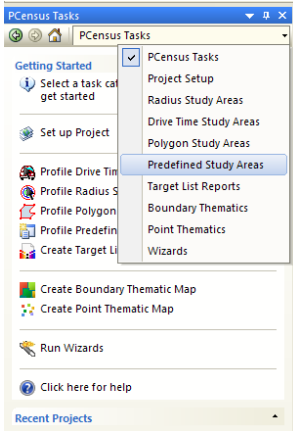
 *In this example, we will use Lifestyle Targeting (see page 85) to select the variables to be displayed. While this is not strictly necessary, it provides an opportunity to define variable labels that are easily recognizable in the dialogs provided by ArcView.*



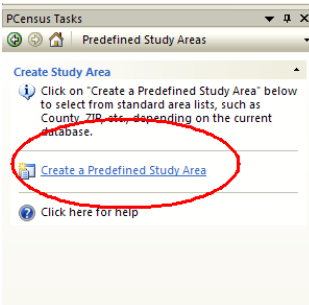
➤ From the **Project Setup** task pane, select **open additional map layers...**

➤ Open **StreetMap USA** from the ESRI directory where it is saved

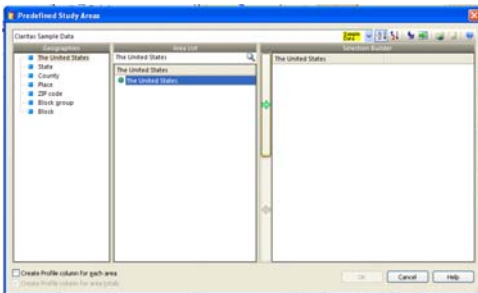
PCensus User's Guide



➤ Before you can create the Dot Density map, you will have to define a predefined study area for all of the US. Select the **Predefined Study Areas** task from the **PCensus Tasks** drop-down menu bar.

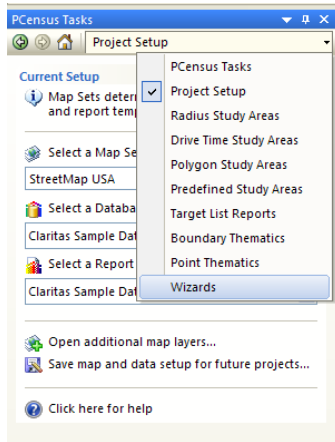


➤ Click on **Create a Predefined Study Area**

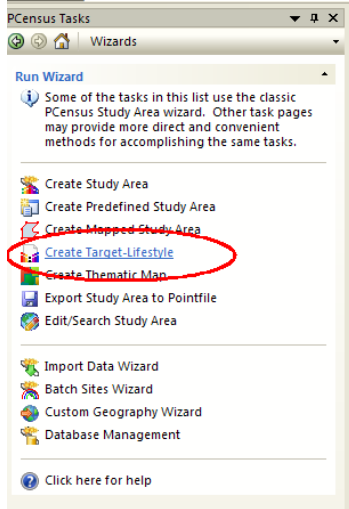


➤ Add **United States** to the Selection Builder as a predefined study area

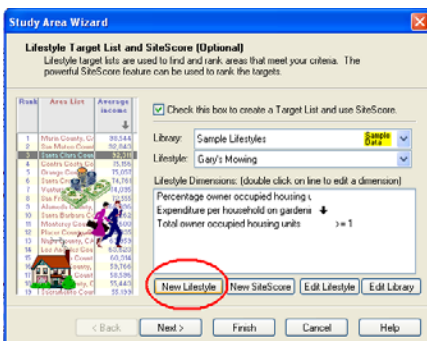
Create an Advanced Thematic Map



- Select **Wizards** from the **PCensus Tasks** drop-down menu bar.

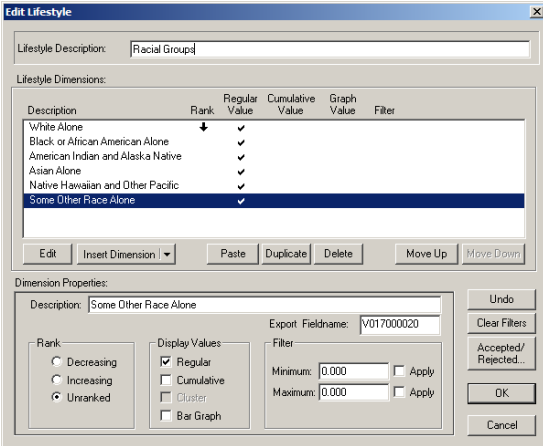


- Select **Create Target-Lifestyle** from the **Wizards** page.

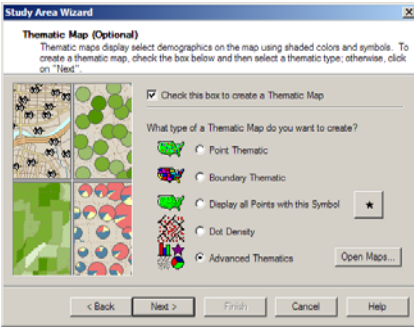


- Select **New Lifestyle** from the **Study Area Wizard**

PCensus User's Guide



- Change the **Lifestyle Description** to **Racial Groups**.
- Use the button to add the Racial Group variables from the **Pop Facts: Population Quick Facts** category as shown.
- Click .

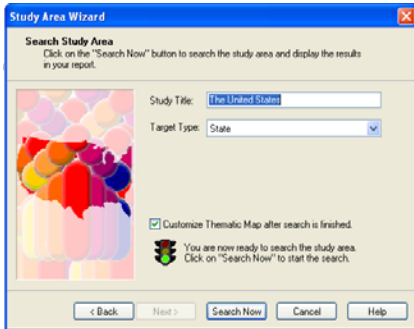


- Check the box Check this box to create a Thematic Map .
- Select **Advanced Thematics** .

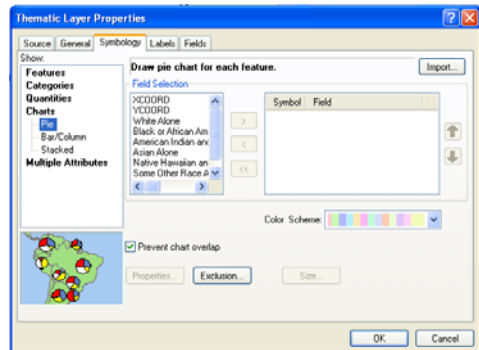


2 An important feature of **Advanced Thematic Mapping** is its capability to create “multivariate” maps such as pie charts or column charts. For this reason, we do not select a specific variable at this point; we only select the category that contains the variables of interest. The actual selection will be made after the study area has been searched.

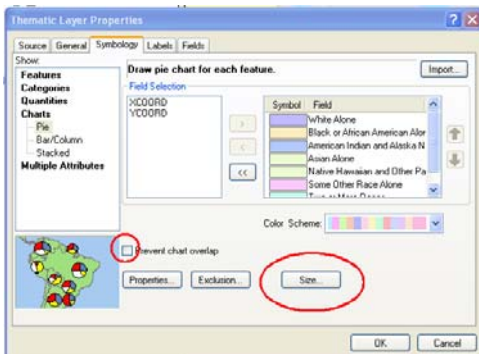
Create an Advanced Thematic Map



- Set the **Target Type** to State and ensure the check box is selected for the **Customize Thematic Map after search is finished** option
- Click on the **Search Now** button



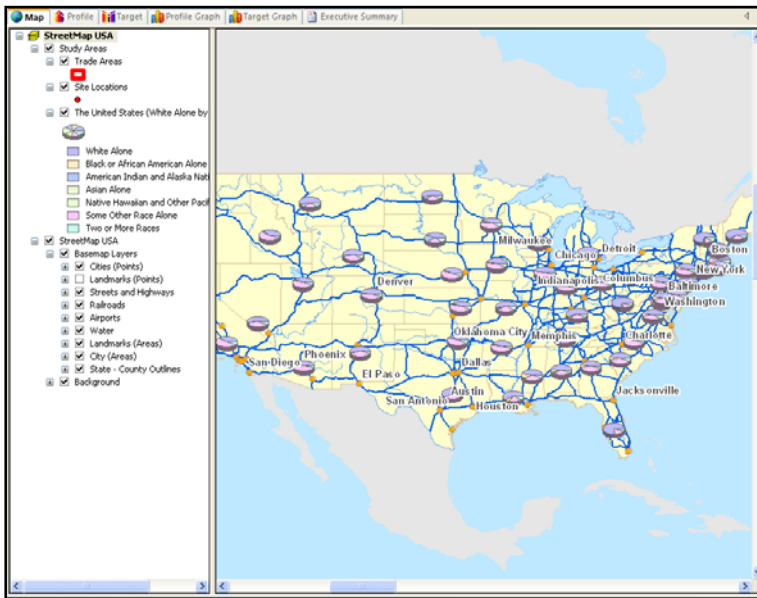
- Select the **Symbology** tab and select **Charts** from the **Show:** dialog
- With the Pie Chart option highlighted, pick the race fields to add to your selection



- Uncheck the **Prevent Chart Overlap** checkbox and hit the **Size...** button to change the pie charts to size 20 pts.
- Select **OK**

PCensus User's Guide

PCensus displays the finished map.



Note: If the pie charts do not appear as shown, you may need to adjust the Style settings provided by ArcView




- Right-click on **The United States** layer and click on **Properties**.
- Experiment with the **Size...** or other settings to produce a satisfactory map.

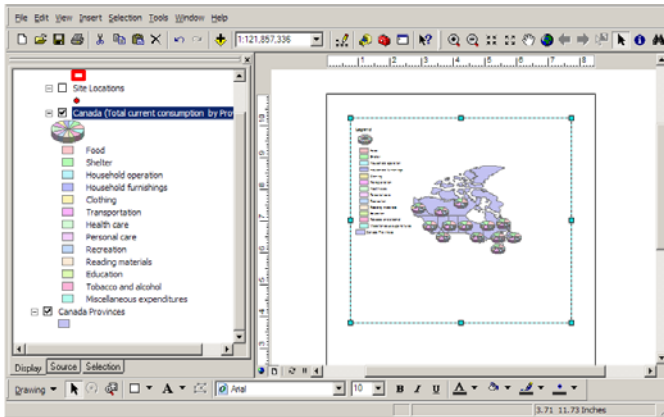
What Can I Do Now?

You can use the features of ArcMap to manipulate the map in ways not supported by PCensus. For example, follow these steps to add a legend to your printed map.

- Switch to the **Map** tab.

- Click  in the tool bar and specify a name and location for the mxd document.

PCensus will ask you if you wish to open the map in ArcMap.



- Open your exported map in ArcMap
- Select **Layout View** from the **View** menu
- Select **Legend** from the **Insert** menu and follow the wizard steps to specify the required elements.

Experiment with creating different types of thematic maps by selecting other options.

20 Create a Target List

Objective

Identify areas within a study area that match the criteria defined by a “Lifestyle”.

Background

Lifestyle Targeting is a powerful feature that lets you identify areas called **targets** within your study area that match a specific demographic profile. For example, you might want to find ZIP codes where the average income is between \$40,000 and \$50,000, and the population is expected to increase by five percent in the next five years.

Lifestyle targeting creates a sorted list of the target areas that meet your criteria, showing the values of any variables (dimensions) that you have defined. The target list is displayed in the **Target List** tab, and can be printed or exported to other programs.

To use lifestyle targeting, you must define a **Lifestyle**, which is like a “recipe” for your target population. The PCensus Lifestyle Editor lets you build a list of the dimensions that you consider to be important for your study, and to apply **Filters** that restrict the selected targets based on the value of one or more of these dimensions. The Lifestyle Editor also specifies the order in which the selected targets will be listed, so you can easily identify your most (or least) favorable areas.

Lifestyle targeting is especially powerful when used with databases to which you have attached your own data (page 191); this provides a flexible method for **Penetration Analysis** (page 245).

Steps to Create a Target List

We will use a simple (and fictitious) example to see how lifestyle targeting could be used to solve a marketing problem.

Gary Smart, owner of Gary's Mowing, has obtained a list of names and addresses of families living in Whatcom County, WA, and he wants to use these addresses to mail flyers advertising his mowing service.

Mailing is expensive, so he must make sure that as many pieces as possible go to homes that will potentially use his services. Gary thinks that his service

PCensus User's Guide

would be of more interest to homeowners than renters, and that people who spend more than average on gardening supplies would probably be his best customers.

Using targeting, Gary can identify the ZIP codes in the area that meet these criteria. The ZIP codes will be used to select the best prospects from the mailing list.

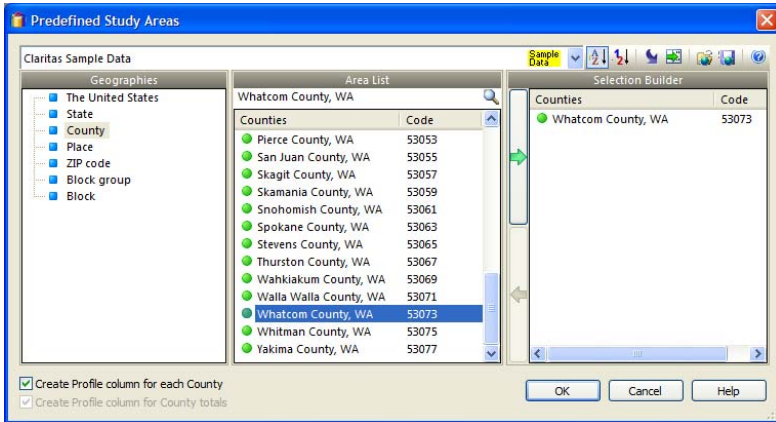
The following steps show the procedure that Gary will use to select the best ZIP codes.

Specify the Study Area

The first step in creating a target list is to define the study area, the overall area of interest. The study area can be a predefined area (see Chapter 5, Profile Predefined Areas) or other geographical area such as a circle (Chapter 8) or drive time area (Chapter 9).

For this example, we will use Whatcom County, WA for our study area.

- Select **Create a Predefined Study Area** from the Tasks window.

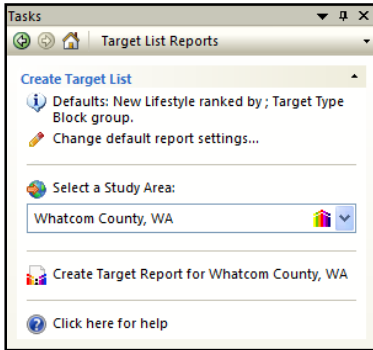



- Create a Profile Column for Whatcom County, using the **Claritas Sample Data**.

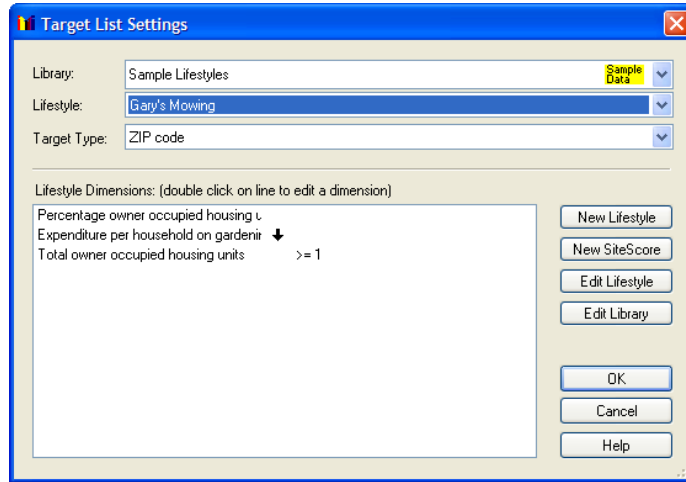
Select a Lifestyle

To create a target report, we must use a **Lifestyle** definition; we can either create a new lifestyle or re-use one that was used in a previous project.

We have started a definition for Gary's project. To see what we have done so far:



- Open the **Target List Reports** pane in the PCensus Tasks window.
- Check the **Whatcom County** is selected as the Study Area.
- Click  **Change default report settings...** to display the **Target List Settings** dialog box.



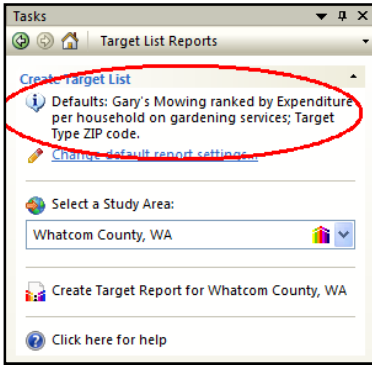
- Select **Gary's Mowing** in the **Lifestyle** list.

The **Lifestyle Dimensions** window shows the three quantities we have selected to display as columns in the target list:

- **Percentage owner occupied housing units**
- **Expenditure per household on gardening services**
- **Total owner occupied housing units**

- Select **ZIP Code** as the **Target Type**.
- Click **OK** to close the dialog.

PCensus User's Guide



The **Defaults:** entry now shows a summary of the settings to be used.

➤ Click **Create Target Report for Whatcom County.**

Rank	Whatcom County, WA ZIP code List	Percentage owner occupied housing units	Expenditure per household on gardening services	Total owner occupied housing units
1	98229 Bellingham	67.59	175	6,951
2	98230 Blaine	70.32	170	3,095
3	98264 Lynden	70.32	168	4,027
4	98226 Bellingham	71.56	163	8,297
5	98262 Lummi Island	78.61	162	305
6	98248 Ferndale	75.11	160	4,964
7	98240 Custer	81.35	155	820
8	98244 Deming	79.93	149	697
9	98247 Everson	73.80	146	1,958
10	98266 Maple Falls	77.78	142	672
11	98225 Bellingham	42.02	141	7,509
12	00072 National Forest/Park	8.33	135	2
13	98220 Acme	76.80	133	139
14	98295 Sumas	66.10	131	503
15	98281 Point Roberts	71.99	130	437
Accepted	15 Targets	63.24	158	40,376
Rejected	0 Targets			0
Total	15 Targets	63.24	158	40,376

The **Target List** browser lists the ZIP codes, with columns representing the three dimensions defined in the lifestyle:

The areas are listed in decreasing order of the “**Expenditure per household on gardening services**” dimension.

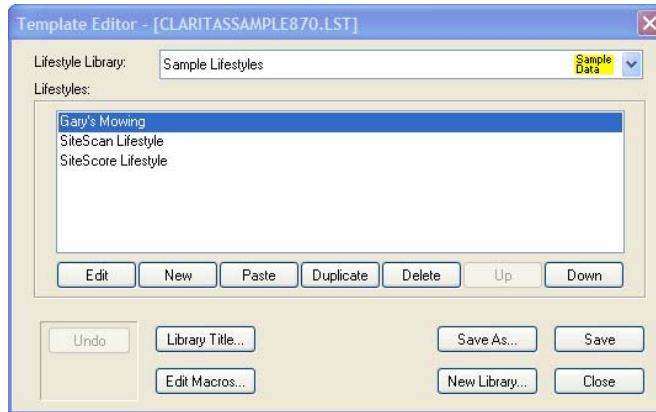
Note: The “**Totals**” line gives us the useful information that the average household expenditure on gardening services for the study area is **\$158** for the **40,376** households.

Refine the Lifestyle

Now we will refine the lifestyle to isolate the areas of greatest interest.

- Click **Defaults** to redisplay the **Target List Settings** dialog box.
- Click **Edit Library** to display the **Template Editor** dialog box.

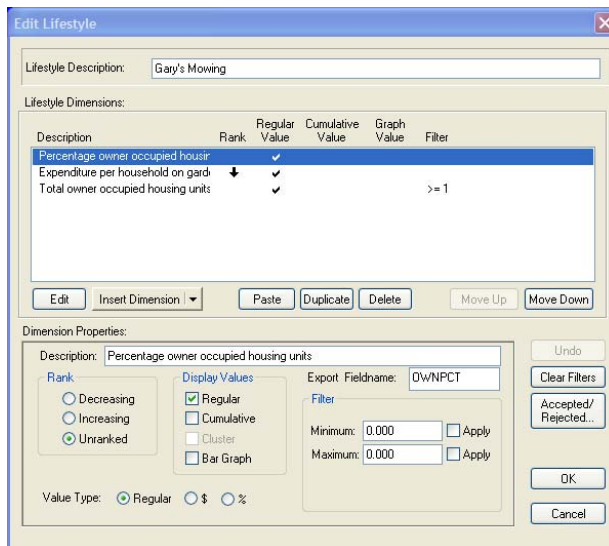
A Library is a collection of lifestyles. You can create new libraries to help you to organize your projects. Note that a library is actually a special type of **Data Template** (see Chapter 32); it can be selected in the Template list to display your dimensions in the Profile browser.



We will make a copy of the original **Gary's Mowing** lifestyle so that we can leave the original version intact.

- Select the **Gary's Mowing** lifestyle.
- Click **Duplicate** to create a new version [version 2].
- Click **Edit** to display the new lifestyle's definition.

❓ *The **Edit Lifestyle** dialog box shows the three dimensions in the lifestyle. As you use the mouse to highlight each dimension, its properties (ranking, display, filter) are displayed in the **Dimension Properties** panel below so that we can revise them.*



Notice that **Expenditure per household on Gardening Supplies** is marked ↓ in the **Rank** column to signify that targets will be ranked in descending order of this dimension.

PCensus User's Guide

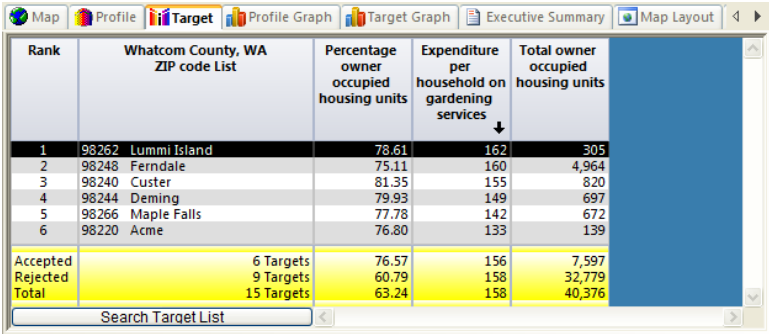
The **Total Owner Occupied** dimension is marked ≥ 1 in the **Filter** panel. This ensures that only ZIP codes with one or more owner-occupied residences will be accepted as target areas.

We will now apply another filter to display only those target areas where at least 75 percent of properties are owner-occupied.

- Highlight the **Percentage owner occupied housing units** dimension.
- Type **75** in the **Filter Minimum** box.
- Click **OK** to close the **Edit Lifestyle** dialog box.
- Click **Close** to exit the editor, and confirm that you wish to save the changes to the library.
- Click **OK** to return to the task pane.

Note: Gary's Mowing [Version 2] is now the selected lifestyle.

- Click  **Create Target Report for Whatcom County** to regenerate the report.



Rank	Whatcom County, WA ZIP code List	Percentage owner occupied housing units	Expenditure per household on gardening services	Total owner occupied housing units
1	98262 Lummi Island	78.61	162	305
2	98248 Ferndale	75.11	160	4,964
3	98240 Custer	81.35	155	820
4	98244 Deming	79.93	149	697
5	98266 Maple Falls	77.78	142	672
6	98220 Acme	76.80	133	139
Accepted	6 Targets	76.57	156	7,597
Rejected	9 Targets	60.79	158	32,779
Total	15 Targets	63.24	158	40,376

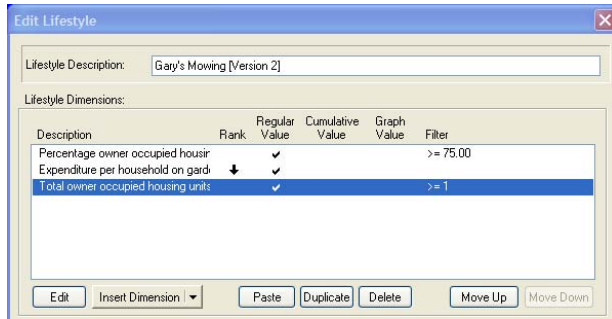
PCensus displays the six ZIP codes that passed our filter. Nine ZIP codes were rejected, as indicated in the bottom yellow line.

Add a New Dimension to the Lifestyle

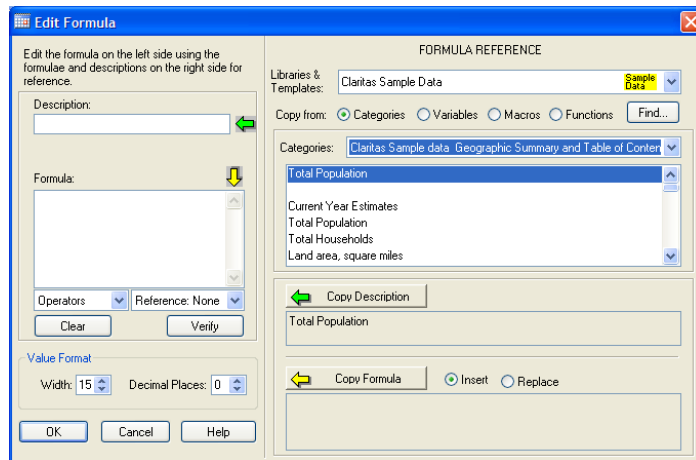
Gary would also like to know the average incomes in the selected areas, so we will add a new dimension to the lifestyle:



- Click the column header button  to display the column properties menu, and select **Modify Lifestyle...** to display the **Edit Lifestyle** dialog box again.



- Highlight the last dimension (**Total owner occupied housing units**).
- Click **Insert Dimension** and select **Formula** from the drop-down list to create a new dimension entry and open the **Edit Formula** dialog box.



Every data item in a PCensus database is called a **variable**, and is referred to by a symbolic name. For example, current year population is represented by the name **CY_POP**.

We must supply a formula to define the new dimension. A formula is a mathematical expression consisting of one or more variables or constants and the signs for addition, subtraction, multiplication, and division (**+ - * /**).

The **Edit Formula** window is divided into two panes:

- The left pane is where we enter formulas and descriptions to define our dimensions.

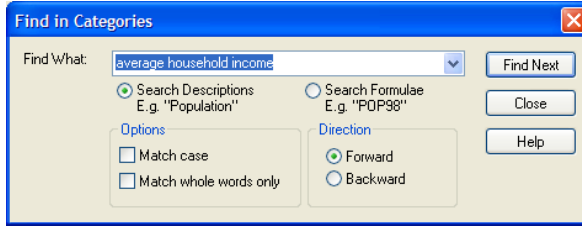
? *If we knew the names of the variables, we could type the formula directly, but PCensus provides an "expression builder" to help us develop the formulas we need.*

PCensus User's Guide

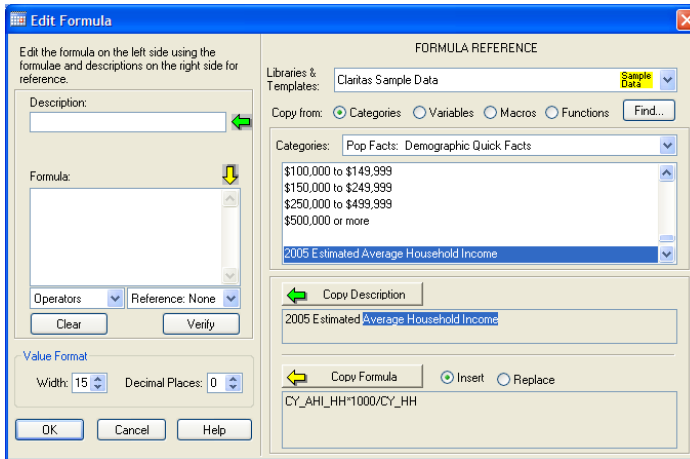
- The right pane, called the **FORMULA REFERENCE** area, provides a source from which we can “paste” pre-defined descriptions and formulas into the appropriate areas in the left-hand pane.

The **Formula Reference** pane allows us to select any of the values that are displayed in the PCensus **Profile** (page 141); the entries are organized in categories just as they are in the profile.

➤ Click **Find...** in the **FORMULA REFERENCE** panel.



➤ Type “Average Household Income” and click **Find Next**.



PCensus locates the template category containing the required variable and highlights it.


Note that the description and formula for each variable are displayed in the lower panels.


The formula for average income is **CY_AHI_HH*1000/CY_HH**, based on the following variables:

- **CY_AHI_HH**: Current Year Aggregate household income (in thousands of dollars).
- **CY_HH**: Current Year Total Number of Households.

? The formula multiplies the aggregate income by 1000 to convert to dollars and divides the result by the number of households to calculate the average income.

- Click  and then  to transfer the entries into the **Description** and **Formula** boxes in the left-hand pane.

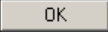
Description:
Average Household Income 

Formula:
(CY_AHL_HH*1000/CY_HH) 

Operators

- Click  to return to the **Edit Lifestyle** dialog box.

Description	Rank	Regular Value	Cumulative Value	Graph Value	Filter
Percentage owner occupied housi		✓			>= 75.00
Expenditure per household on gardi	↓	✓			
Total owner occupied housing units		✓			>= 1
Average Household Income		✓			

- Click  to re-search the study area and display the updated target list with the new income variable.

Rank	Whatcom County, WA ZIP code List	Percentage owner occupied housing units	Expenditure per household on gardening services	Total owner occupied housing units	Average Household Income
1	98262 Lummi Island	78.61	162	305	73,672
2	98248 Ferndale	75.11	160	4,964	62,495
3	98240 Custer	81.35	155	820	74,357
4	98244 Deming	79.93	149	697	62,399
5	98266 Maple Falls	77.78	142	672	50,858
6	98220 Acme	76.80	133	139	56,929
Accepted	6 Targets	76.57	156	7,597	62,797
Rejected	9 Targets	60.79	158	32,779	58,155
Total	15 Targets	63.24	158	40,376	58,860

Search Target List

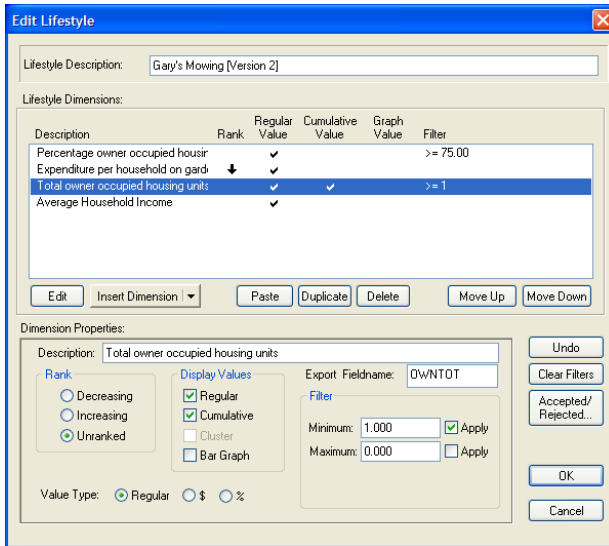
The ZIP codes appear in descending order of expenditure on gardening services. Not surprisingly, the incomes are in roughly the same order.

Gary can use the ZIP codes highest in the list to select entries from his mailing list. In a real project, where there may be hundreds of qualifying target areas, he would probably export the target list to a computer file (page 135), which could be used to select prospective customers from a mailing list.

Cumulative Display

For a final exercise, let's suppose that Gary has decided that he will mail about 6,000 flyers. PCensus can help him select the most favorable areas that will let him stay within this limit.

- Click the **Percentage owner occupied housing units** column header button and select **Modify Lifestyle** from the menu.
- Highlight the **Total owner occupied housing units** dimension.



- Check **Cumulative** in the **Display Values** panel and click **OK**.

We now have a new column in which the **Total Owner Occupied housing units** dimension is displayed cumulatively:

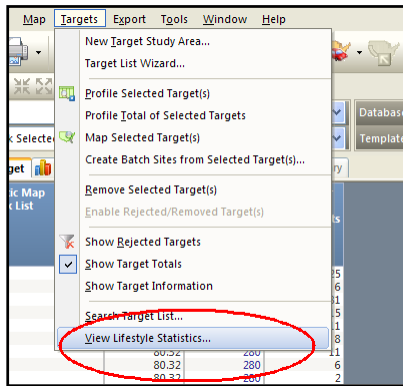
Rank	Whatcom County, WA ZIP code List	Percentage owner occupied housing units	Expenditure per household on gardening services ↓	Total owner occupied housing units		Average Household Income
					Cumulative	
1	98262 Lummi Island	78.61	162	305	305	73,672
2	98248 Ferndale	75.11	160	4,964	5,269	62,495
3	98240 Custer	81.35	155	820	6,089	74,357
4	98244 Deming	79.93	149	697	6,786	62,399
5	98266 Maple Falls	77.78	142	672	7,458	50,858
6	98220 Acme	76.80	133	139	7,597	56,929
Accepted		6 Targets	76.57	156	7,597	62,797
Rejected		9 Targets	60.79	158	32,779	58,155
Total		15 Targets	63.24	158	40,376	58,860

Each row in the **Cumulative** column shows the total of all owned residences ranking equal or higher. The numbers displayed get progressively larger down the column.

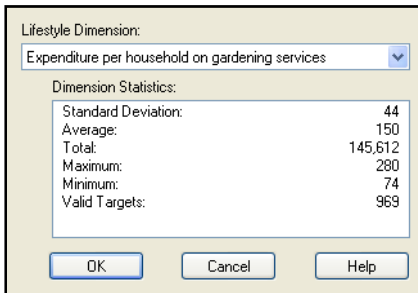
When Gary selects his ZIP codes, he will give priority to the highest-ranking ones. The cumulative value shows the size of the potential market, so if he selects the first three ZIP codes, he can expect to find **6,089** homeowners.

Lifestyle Statistics

During the lifestyle targeting process, PCensus computes basic statistical information for each specified dimension. To see the results of these calculations:



➤ Select **View Lifestyle Statistics** from the Targets menu.



➤ Select the **Lifestyle Dimension** for which you would like to see statistics.

ⓘ *Note that some statistics may not be meaningful for all dimensions. For example, the **Total** of "Percentage owner occupied housing units" for each target is of limited use.*

What Can I Do Now?

- **Explore the Target List** to see ways to interpret the data (page 163).
- **Export the Target List** for use with other software applications (page 135).

Combine lifestyle targeting with thematic mapping by selecting both options in the Study Area Wizard.

21 Create a Profile Graph

Objective

Display selected elements of a profile project in a colored graph.

Background

The graphing feature of PCensus provides a method for visualizing the data displayed in the Profile and Target browsers. By default, graphs are displayed in “bar chart” format, but a complete set of graphing methods, such as “pie” or “ribbon” charts is available.

Profile graphs can be used as follows:

- To display the results of a group of variables (for example, households by income range) as a frequency histogram.
- To display results for a variable for comparison between several study areas.
- Combinations of the above types.

Steps to Create a Profile Graph

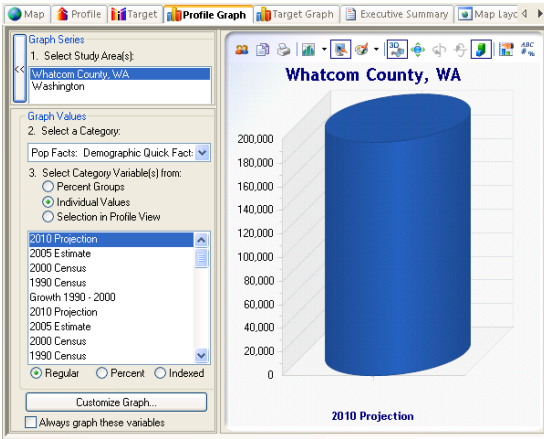
Pop Facts: Demographic Quick Facts	Whatcom County, WA	Washington
Population		
2010 Projection	197,420	6,669,710
2005 Estimate	183,747	6,311,254
2000 Census	166,814	5,894,221
1990 Census	127,780	4,866,692
Growth 1990 - 2000	30.55%	21.11%
Households		
2010 Projection	76,964	2,571,628
2005 Estimate	71,394	2,432,897
2000 Census	64,446	2,271,398
1990 Census	48,543	1,872,431
Growth 1990 - 2000	32.76%	21.31%
2005 Estimated Population by Single Race Classification	183,747	6,311,254
White Alone	160,070 87.11%	5,040,082 79.86%
Black or African American Alone	1,538 0.84%	211,644 3.35%
American Indian and Alaska Native Alone	5,031 2.74%	100,276 1.59%
Asian Alone	5,943 3.23%	397,957 6.31%
Native Hawaiian and Other Pacific Islander Alone	324 0.18%	28,494 0.45%
Some Other Race Alone	5,205 2.83%	281,026 4.45%
Two or More Races	5,636 3.07%	251,775 3.99%
2005 Estimated Population Hispanic or Latino	183,747	6,311,254
Hispanic or Latino	10,999 5.99%	553,278 8.77%
Not Hispanic or Latino	172,748 94.01%	5,757,976 91.23%
2005 Tenure of Occupied Housing Units	71,394	2,432,897
Owner Occupied	45,316 63.47%	1,578,107 64.87%
Renter Occupied	26,078 36.53%	854,790 35.13%
2005 Average Household Size	2.50	2.54

- Create a profile containing two or more study areas, for example a state and a county (page19).

The **Profile** tab contains columns for Washington State and a ZIP code.

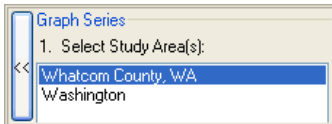
- Select the category **Pop Facts: Demographic Quick Facts**.
- To create a graph, select the **Profile Graph** tab.

PCensus User's Guide



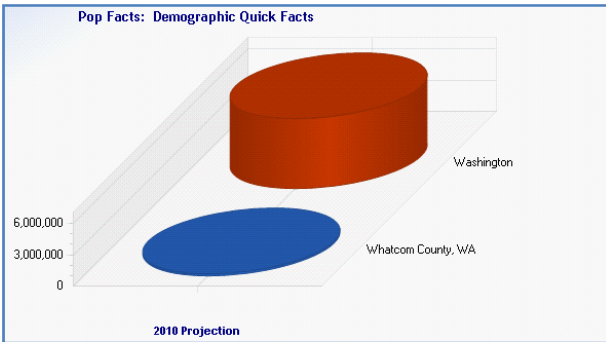
By default, PCensus creates a bar chart in **3D** format.

The **Graph Series** panel contains a list of all the study areas in project.



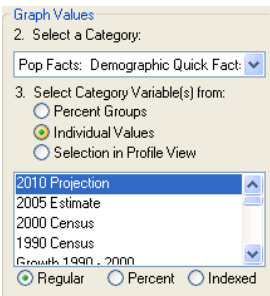
➤ Select area(s) for inclusion in the graph by clicking with the mouse.

🔍 *Note: You can select multiple areas by dragging the mouse or by holding down the **CTRL** key while clicking.*



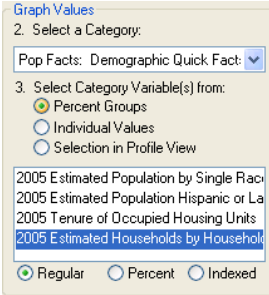
🔍 *Click the << button in the top left corner of the graph window to hide or show the graphing controls.*

When more than one series has been selected, the data series are superimposed in a single graph to allow comparisons.

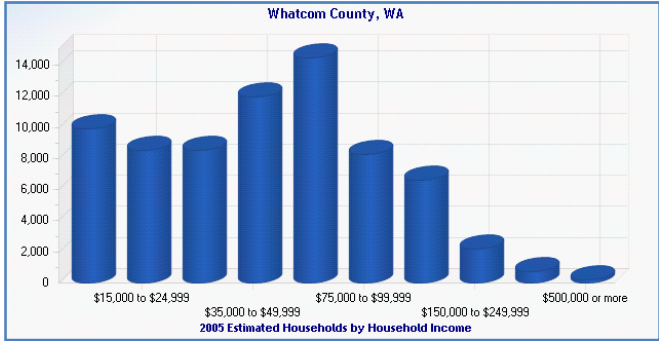


The **Graph Values** panel contains a list of the categories in the profile and a list of the variables in the current category.

The **Select Category Variable(s) from** selector determines the groups of variables that are available to be displayed in the graph:



- Click on **Whatcom County** so that only one study area is displayed.
- Select **Percent Groups** to select a series of variables that are grouped in the Percentage Column of the profile report (page 143).
- Select **Current Year Estimated Households by Household Income**.



🔍 *This feature conveniently allows you to display distributions such as Household Incomes.*






- Select **Private Households**.

Customize the Graph













The Profile Graph window contains a tool bar that lets you modify the style and content of graphs.



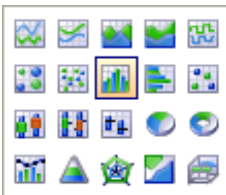
🔍 *The tool bar can be hidden or displayed by right-clicking in the graph window.*

-  **Personalized Charts:** Displays a menu to save or display your favorite chart view.
-  **Copy to Clipboard:** Copies the currently displayed chart.
-  **Print...:** Prints the current chart.
-  **Gallery:** Selects the chart style (see below).
-  **Anti-aliasing:** Turns on edge-smoothing in 3D charts for more attractive appearance.

PCensus User's Guide

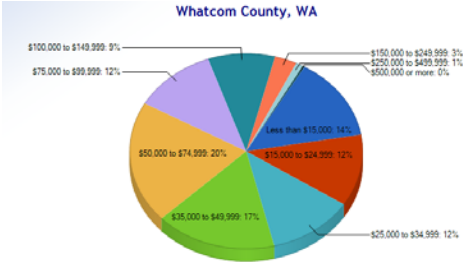
-  **Palette Selector:** Picks colors for chart features.
-  **3D/2D:** Toggles 3-dimensional view.
-  **Rotated View:** Changes view-point of 3D Chart.
-  **Rotate around y axis.**
-  **Rotate around x axis.**
-  **Clustered Z axis:** Displays multiple study areas side-by-side or interleaved.
-  **Axes Settings:** Controls labeling of axes.
-  **Point Labels:** Adds numeric labels to bars or nodes.
-  **Data Grid:** Displays graphed values in a table.
-  **Legend Box:** Displays a legend of colored components.
-  **Zoom:** Enables the Zoom tool to examine graph details.
-  **Properties:** Displays optional settings in a dialog box.

Graph Styles

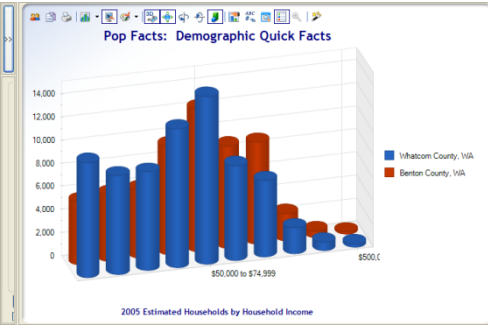


➤ Click the **Gallery...** tool bar icon to display the graph style selector.

Create a Profile Graph



➤ Select the **Pie Chart** style.



➤ Experiment with the selection of different categories and customizing options.

🔍 *This example illustrates the use of a category that displays multiple data columns.*

🔍 *Note: You can change the style and content of graph titles by right-clicking them in the graph window.*

22 Create a Target Graph

Objective

Display dimension values for a target list in a colored graph.

Background

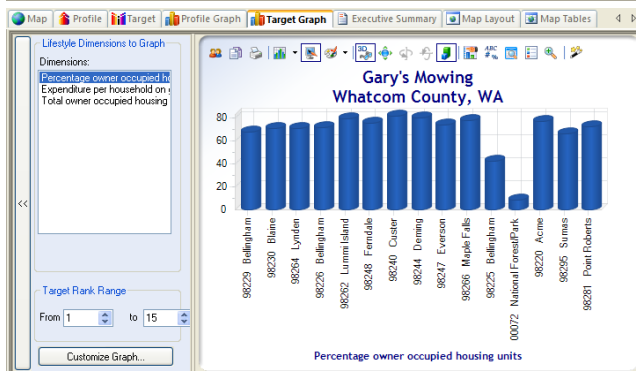
Target graphs are primarily used for displaying comparisons of dimension values between target areas. Target graphs can be used to highlight anomalous values or relationships between variables.

Steps to Create a Target Graph

- Create a Lifestyle Target List (page 85)

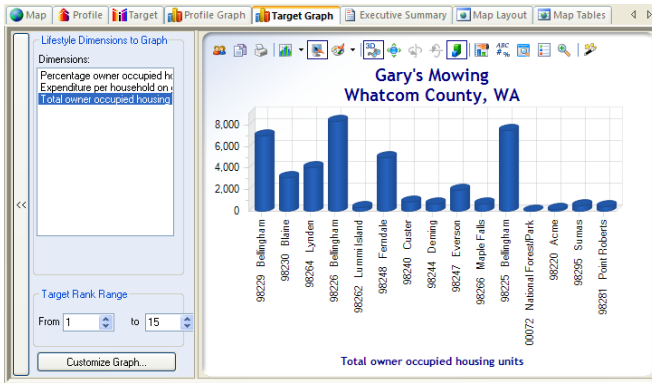
Rank	Whatcom County, WA ZIP code List	Percentage owner occupied housing units	Expenditure per household on gardening services ↓	Total owner occupied housing units
1	98229 Bellingham	67.59	175	6,951
2	98230 Blaine	70.32	170	3,095
3	98264 Lynden	70.32	168	4,027
4	98226 Bellingham	71.56	163	8,297
5	98262 Lummi Island	78.61	162	305
6	98248 Ferndale	75.11	160	4,964
7	98240 Custer	81.35	155	820
8	98244 Deming	79.93	149	697
9	98247 Everson	73.80	146	1,958
10	98266 Maple Falls	77.78	142	672
11	98225 Bellingham	42.02	141	7,509
12	00072 National Forest/Park	8.33	135	2
13	98220 Acme	76.80	133	139
14	98295 Sumas	66.10	131	503
15	98281 Point Roberts	71.99	130	437
Accepted	15 Targets	63.24	158	40,376
Rejected	0 Targets			0
Total	15 Targets	63.24	158	40,376

The **Target List** browser lists the ZIP code areas in Whatcom county, WA, with columns representing three dimensions defined in the lifestyle.



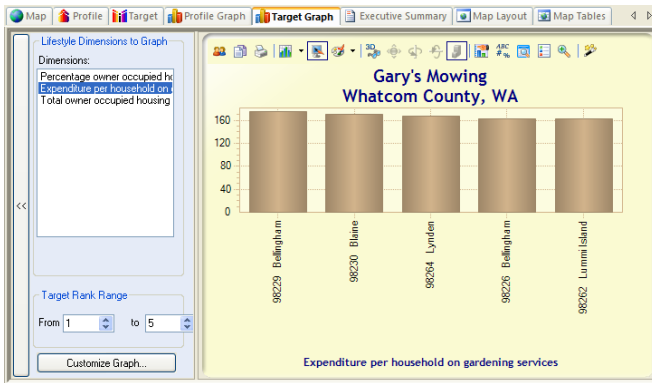
- Select the **Target Graph** tab.
- By default, PCensus creates a bar chart in 3D format, showing colored bars representing the values of the **Percentage Owner Occupied** dimension.

PCensus User's Guide



➤ Select a different variable, for example **Total owner occupied housing units**.

You can use **CTRL+click** to select multiple dimensions.



➤ Change the **Target Rank Range** settings to change the number of targets displayed.

What Can I Do Now?

Experiment with the options in the Target Graph window, including the customization controls.

23 SiteScan - Scan an Area for Potential Sites

Objective

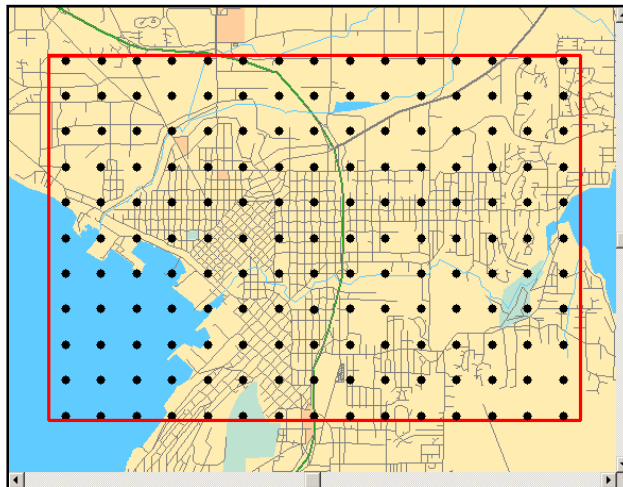
Use SiteScan to identify potentially favorable site locations for providing commercial or public services.

Background

We have seen in the preceding sections how to characterize the trading area for a business location using a circular area or drive time polygon centered on the location.

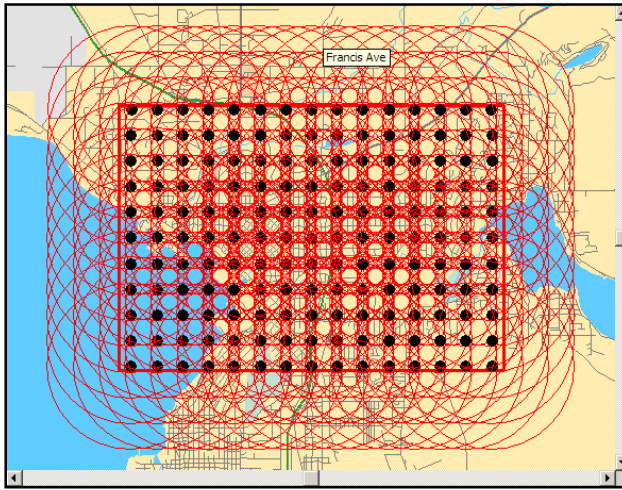
If we do not have a specific candidate location, we can create profiles for a large number of locations. We can then rank these locations according to demographic criteria and display them in a “hot spot” map that will highlight the most favorable locations.

SiteScan allows us to define a “market area” as a rectangle of any size. Within this area, a regular grid of points is established, using a distance that you specify; for example, 0.5 mile.

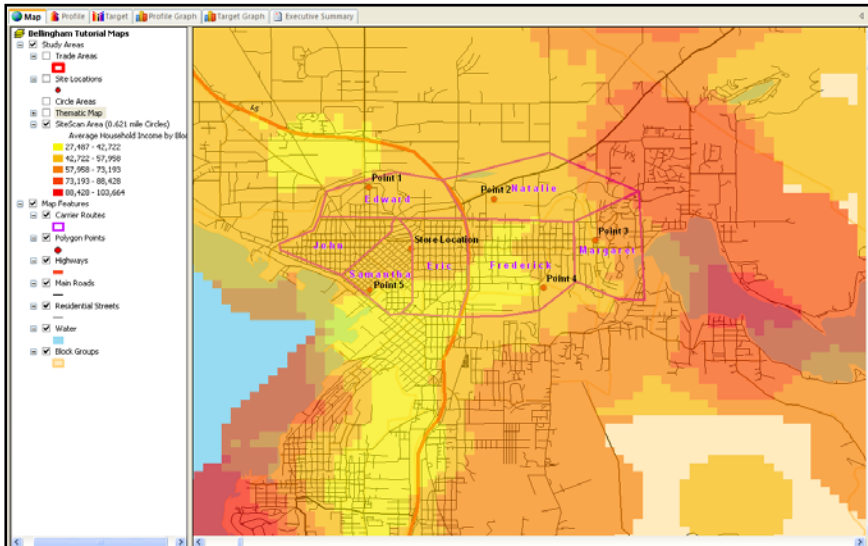


Each point is used to generate a circle or drive time of specified size (representing a potential trade area); for example, a 1-mile radius.

PCensus User's Guide

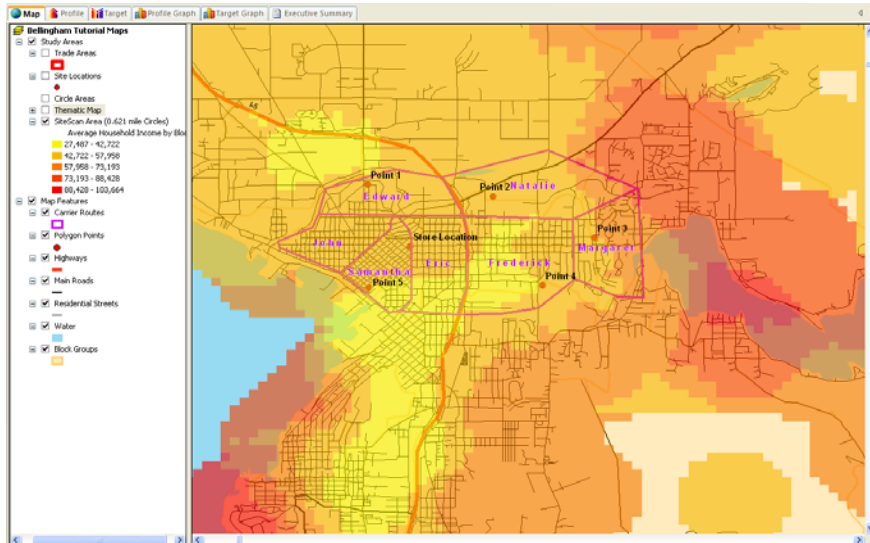


Each circle is searched, and the demographic results for each circle are used to generate a thematic “hotspot” map using grid squares centered on each point.



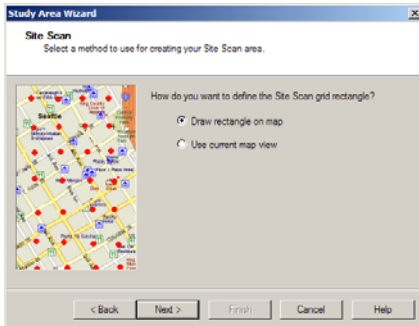
Note that this thematic map is very different from a standard “boundary thematic” map (e.g., using census boundaries). In the SiteScan hotspot map, each grid square is colored according to a demographic characteristic (in this case, population within one mile of the cell’s center), whereas in a conventional thematic, the colors represent data within the boundary itself.

SiteScan - Scan an Area for Potential Sites



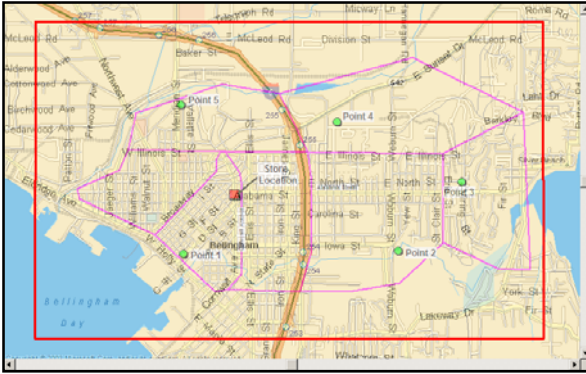
It is quite possible for a grid cell to have a large accessible population even though the cell itself is situated in vacant land (which could make it an ideal site for a new business location.)

Steps to Create a SiteScan Project



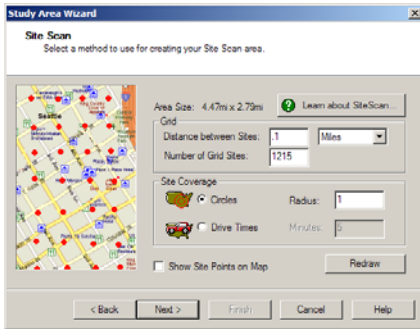
- Select **New SiteScan Study Area...** from the **Study Area** menu.
- Select **Draw rectangle on map**.
- Click .

PCensus User's Guide



➤ Use the mouse to “drag” a rectangle across the Downtown Bellingham area.

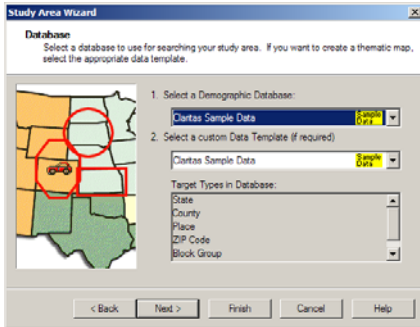
❓ You may need to adjust the map view to display the Bellingham area.



➤ Specify a grid spacing (**Distance between Sites**) of .1 mile, and a **Circle Radius** of 1 mile.

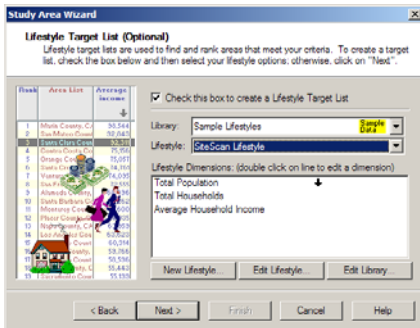
❓ Note that this spacing will generate about 1,000 grid sites in the specified rectangle. There is no specific limit to the number of sites, but very large numbers will result in long search times, as each site must be searched independently.

➤ Click **Next >**



➤ Check that the **Clartas Sample Data** is selected.

➤ Click **Next >**



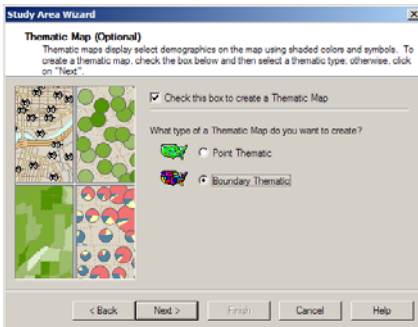
❓ In **SiteScan** projects, the **Lifestyle Targeting** option is selected by default. You can edit the lifestyle definition to specify the variables that interest you (see page 88).

➤ Select the Lifestyle “**SiteScan Lifestyle**”.

❓ This lifestyle is provided for the purposes of illustration. It includes **Total Population**, **Total Households** and **Average Household Income**.

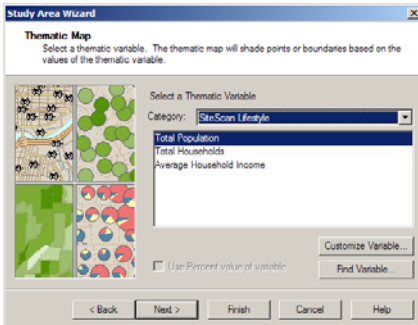
➤ Click **Next >**

SiteScan - Scan an Area for Potential Sites

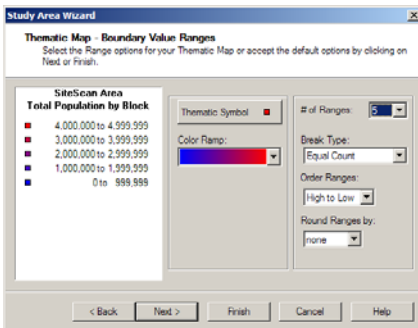


❓ The thematic mapping option is checked by default, to create a SiteScan “hot spot” map.

➤ Click **Next >**.

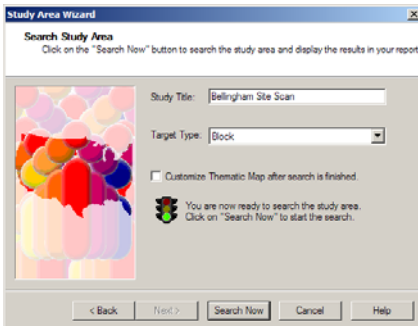


➤ Select a variable to be used for thematic shading and click **Next >**.



➤ Select the ranges and associated colors for the thematic map and click **Next >**.

➤ Click **Next >** in the Export Point File dialog.



❓ Note that the search may take several minutes. Depending on the density of data points and your selected circle size, you may wish to increase the speed of searching by selecting block group targets instead of blocks.

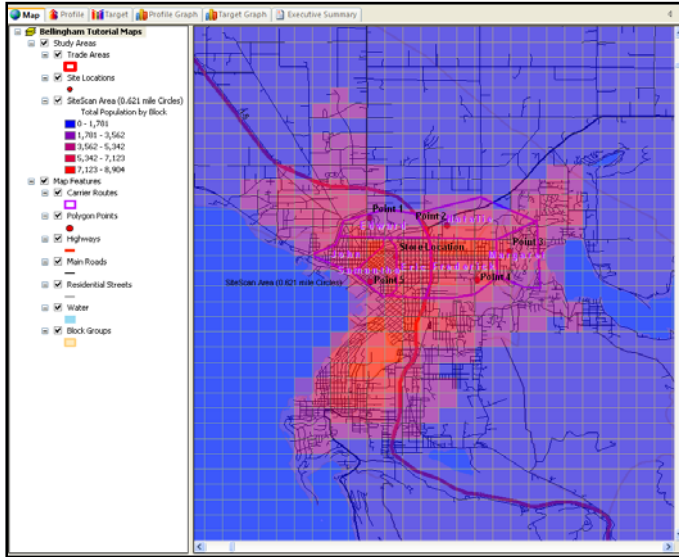
➤ Enter a Title for your study.

➤ Click **Search Now**.

➤ Click **Continue** to close the progress indicator when the search is complete.

PCensus User's Guide

When the search is complete, PCensus generates the hotspot thematic map, highlighting the locations with the highest accessible population.



What Can I Do Now?

- Experiment with SiteScan using different lifestyle dimensions, filters and thematic variables. In particular, try using SiteScore dimensions as described in the following chapter. This is useful for locating potential site locations when you have used modeling to determine multiple demographic factors that you expect to control the performance of a business location.
- Try using drive times or grid squares instead of circles to create SiteScan trade areas.

24 SiteScore - Scoring and Statistics

Objective

Use SiteScore to select and rank targets using multiple variables.

Before You Continue

The concepts and procedures described in this section are of an advanced nature and assume familiarity with statistical concepts such as “median” and “percentile” and with the principles of PCensus lifestyle targeting. Before using SiteScore, it may be helpful to read the following chapters: chapter 20 (Create a Target List) and chapter 33 (Understanding the Target Browser).

Background

The PCensus Lifestyle Targeting feature allows us to rank target areas based on the value of a single specified variable such as “Average Income”. Using this approach, we can use “filtering” to select targets in a specified income range, for example greater than \$60,000.

However, we may need to select areas based on an optimal combination of two or more variables. Filters can be applied to more than one variable, for example we can select targets where income is greater than \$60,000 and median age is over 50. This “pass-or-fail” approach would reject areas that narrowly miss one or both of our criteria, as well as areas that perform exceptionally well on one criterion but fail on the other.

As an example, we may have established that a product would appeal to wealthy, well-educated, aging consumers. Ideally, we would like to find areas that satisfy all three criteria, but this requirement might be too restrictive, resulting in a very small number of candidate targets. In this case, we require a method for computing the overall performance of each target; a target would not necessarily be excluded on the basis of a somewhat lower value for one variable if the other two variables are exceptionally favorable.

SiteScore provides a method for characterizing variables by a “score” as opposed to an actual value. For example, if the median income of a block group is very high compared to other block groups in the study area, the block group might score 90 or more, while if it is very low it might score 10 or less.

PCensus User's Guide


In statistical terms, scores are computed by assigning a percentile value to each target; if a target is in the 90th percentile, its score is 90.

Scoring provides two benefits:

- Variables are evaluated on a continuum; instead of “pass-or-fail”, we can assess how closely our criteria are met.
- Scores for multiple variables can be combined to generate an “overall” score.

Because the scores for each variable are numeric, they can be combined mathematically (usually by simple addition) to calculate a combined score. If a block group scores **73** for “household income”, **79** for “median age” and **91** for “percentage with degree”, its overall score is **73+79+91 = 243** out of a possible **300**. **This** score would be normalized (divided by 3 in this case) to give a combined score of **81** out of a possible **100**.

Individual scores may be “weighted”. If we felt that income were twice as important as the other two variables, we could multiply its score by 2, so that the overall score of our block group would be **73x2+80+91 = 317** out of a possible **400** (normalized to **79** out of a possible **100**).

 *The weighting factor may be a negative number. This has the effect of reversing the weighting, for example to give a high score to areas of low income.*

A second method of assigning scores is by defining “custom ranges”. We may be interested in target areas characterized by medium income levels. In this case, we can assign specific scores to ranges: **\$0 to \$30,000** might score **50**, **\$30,000 to \$60,000** might score **100**, and **\$60,000 and over** might score **50**.

SiteScore Methodology

SiteScore is implemented by a set of statistical “functions” that can be combined to create mathematical expressions in much the same way that variables can be combined mathematically as customized dimension formulae (see page 91).

Functions are expressed in the form **FunctionName (argument1, ... argumentN)**. The first argument is usually a formula expression.

The available statistical functions are as follows. In each case, “**expression**” is a variable or formula, for example **CY_POP**:

Function	Description
Percentile (expression)	Evaluates to the percentile of all targets in which the target falls for the value of expression . This is the most commonly used function in SiteScore.
Score (expression, n)	Similar to percentile() but more general. The argument n specifies the number of possible classes, for example n=4 defines quartiles.
TargetValue (expression)	Evaluates to the value of expression for each target (see below).
Rank (expression)	Evaluates to the position of each target in descending order of expression .
Average (expression)	Evaluates to the average of expression for all targets. Result will be identical for all targets.
Total (expression)	Evaluates to the total of expression for all targets. Result will be identical for all targets.
Max (expression) and Min(expression)	Evaluates to the highest and lowest values of expression for all targets. Result will be identical for all targets.
Median (expression)	Evaluates to the median of expression for all targets (i.e. the value for which there is an equal number of targets higher and lower). Result will be identical for all targets.
StdDev (expression)	Evaluates to the standard deviation of expression for all targets. Result will be identical for all targets.
Count (expression)	Evaluates to the number of targets for which expression yields a valid result (i.e. targets with zero-divisions are excluded). Result will be identical for all targets.

There is an important distinction between statistical functions and the standard expressions that are available in the Formula Reference. Standard expressions are evaluated separately for each target area, whereas the statistical functions can only be evaluated in the context of all targets in a study area (after the study area search has been completed). For this reason, standard expressions cannot be mixed with statistical expressions; the following formula (which might be expected to represent the population of a target as a percentage of the entire study area) would be invalid:

$$100 * \text{CY_PO} / \text{Total}(\text{CY_POP})$$

PCensus User's Guide

To emphasize this distinction, the statistical functions can only be used in a special type of dimension called a Statistical dimension (or implicitly in a SiteScore dimension). Similarly, statistical functions cannot be used in formulae used by data templates. They only have meaning in the context of lifestyle targeting.


The statistical function **TargetValue (expression)** is provided to allow calculations of the type illustrated, by converting standard expressions to statistical expressions. The formula

$$100 * \text{TargetValue (CY_POP)} / \text{Total (CY_POP)}$$

will give the required result.

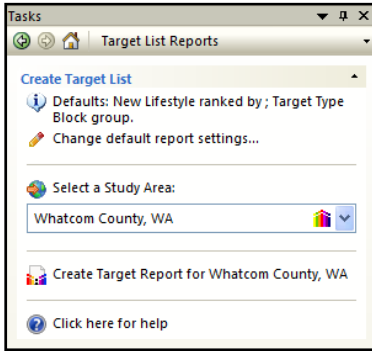
The function **RangeScore ()** is used by SiteScore to calculate custom ranges. However, it is worth noting that this is not a “statistical” function, as the value of its result is not dependent on its comparison with other areas. For this reason, **RangeScore()** can be used in template formulae as well as in lifestyle dimensions.

RangeScore (expression , range1:score1 ; ...; rangeN-1:scoreN-1 ; *:scoreN)	If expression evaluates to the range defined by rangeN , the function evaluates to scoreN . For example: RangeScore (@MEDINC_HH_CY,[40000: 50; 60000:100;*:50]) Evaluates to: 50 if income is < \$40,000 100 if income is \$40,000 to \$60,000. 50 if income is > \$60,000
---	--

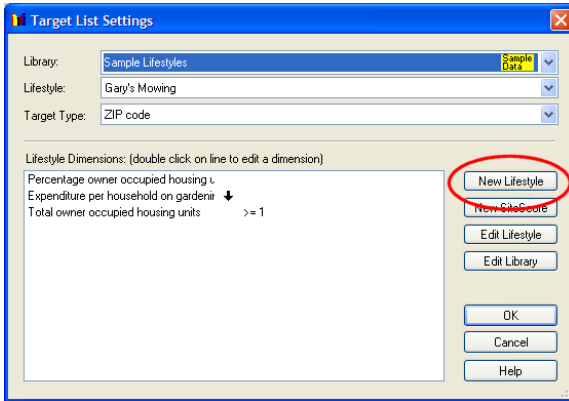
 The syntax for **RangeScore()** is complex. However, the “custom range” method in SiteScore can be used to achieve the same result, as it uses the **RangeScore** function internally.

Simple Scoring

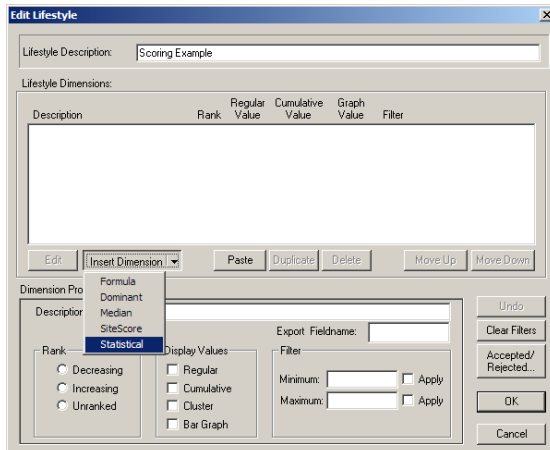
We will begin with a simple example, calculating scores for a single variable (Median Income).



- Create a Profile Column for Whatcom County, using the **Claritas Sample Data**.
- Open the **Target List Reports** pane in the PCensus Tasks window.
- Check that the **Whatcom County** is selected as the Study Area.
- Click **Change default report settings...** to display the **Target List Settings** dialog box.

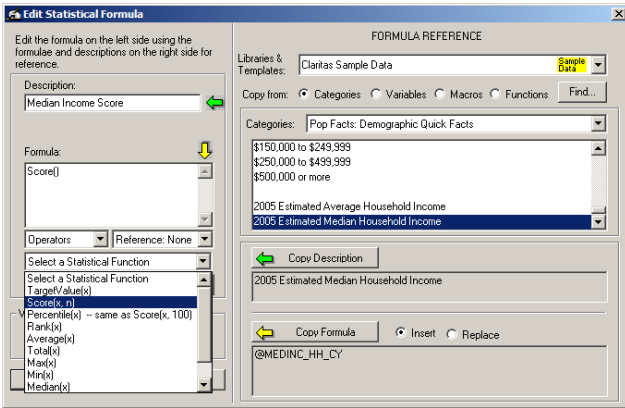


- Click **New Lifestyle**.



- Click **Insert Dimension** and select **Statistical** from the drop-down list.

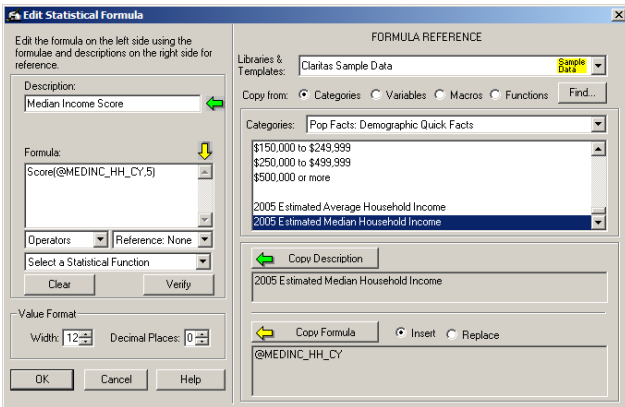
PCensus User's Guide



➤ Select the **Score (x, n)** function from the **Select a Statistical Function** drop-down list.

This will insert the term **Score()** in the formula box, with the cursor placed inside the parentheses.

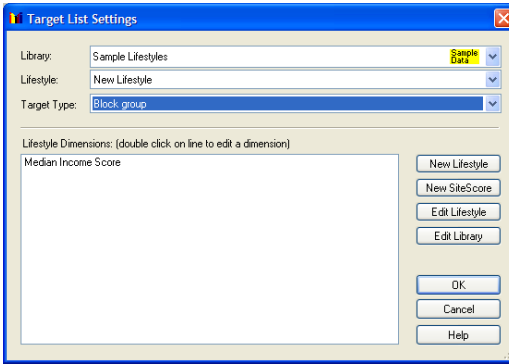
❓ *Note the other available Statistical functions (TargetValue, Percentile etc.). These were described in detail in a previous section (see page 112).*



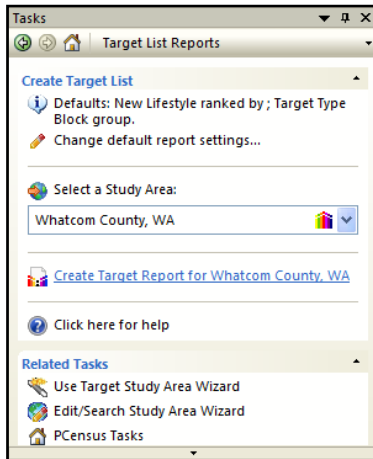
- Use the **Copy Formula** button to place the formula for **2005 Estimated Median Income** in the formula.
- Type the second argument for the formula (**,5**). This indicates that we will compute scores on the basis of five equal ranges (“quintiles”).
- Type a **Description**, for example **Median Income Score**.

❓ *Note that the formula for median income in this template is a “macro” @MEDINC_HH_CY. All median values in this template have been expressed as macros, as this allows them to be pasted directly into mathematical formulae, which cannot be done using the standard notation for medians (page 156). For more information on macros, search for the word “macros” in the PCensus Help system.*

SiteScore - Scoring and Statistics



- Click **OK** to close the **Edit Formula** dialog.
- Select **Block Group** as the **Target Type**.
- Click **OK** to close the **Target List Settings** dialog.



- Click **Create Target Report for Whatcom County, WA**.

PCensus displays a target list showing the scores for each block group.

Rank	Whatcom County, WA Block group List	Median Income Score
1	530730001001	3
2	530730001002	5
3	530730001003	2
4	530730002001	1
5	530730002002	2
6	530730003001	1
7	530730003002	2
8	530730003003	2
9	530730003004	0
10	530730004001	1
11	530730004002	3
12	530730004003	3
13	530730005001	2
14	530730005002	1
15	530730005003	1
16	530730005004	1
Accepted	99 Targets	
Rejected	0 Targets	
Total	99 Targets	

❓ The scores are in the range 1 to 5, reflecting our choice for the second argument of the **Score(x, n)** function.

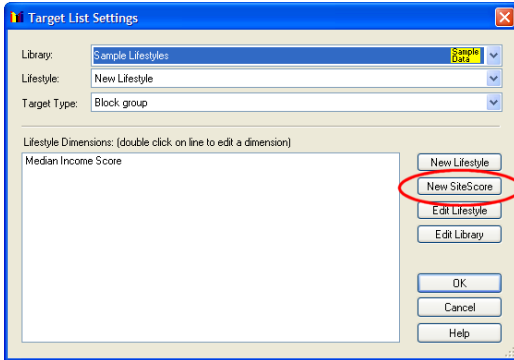
Scoring with Multiple Variables


The statistical functions described above allow us to combine scores mathematically to create an overall score. The following formula:

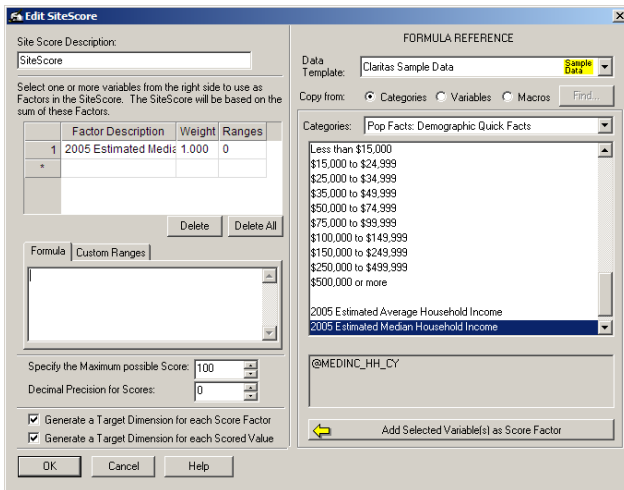
$$(2 * \text{Percentile} (@\text{MEDINC_HH_CY}) + \text{Percentile} (@\text{MEDAGECY})) / 3$$

will compute a combined score for median household income and median age by adding the percentile scores for two variables. The Median income score is weighted by a factor of 2, and the overall score divided by 3 to normalize the result to 100.

Formulae of this type can be created to define very complex scoring schemes, but these may become verbose and difficult to manage. To simplify this process, PCensus provides a special type of dimension, called a "SiteScore dimension" that automatically generates the required formulae.



- Click  Change default report settings... in the Target List task pane.
- Click **New SiteScore**.



- Select **2005 Estimated Median Household income** from the **Demographic Quick Facts** category
- Click **Add Selected variable(s) as Score Factor**.

The variable description and formula are transferred to the SiteScore panel on the left.

SiteScore - Scoring and Statistics

Site Score Description:
SiteScore

Select one or more variables from the right side to use as Factors in the SiteScore. The SiteScore will be based on the sum of these Factors.

Factor Description	Weight	Ranges
2005 Estimated Meds	2.000	

Delete Delete All

Formula Custom Ranges

@MEDINC_HH_CY

- Double-click on the **Weight** entry and change the specified weighting for this factor from 1 to 2.

? This setting causes the score computed for Median income to be multiplied by 2; median income will thus have double the influence on the overall score than factors with a weight of 1.

Site Score Description:
SiteScore

Select one or more variables from the right side to use as Factors in the SiteScore. The SiteScore will be based on the sum of these Factors.

Factor Description	Weight	Ra
2005 Estimated Median House	2.000	0
2005 Estimated Median Age	1.000	0

Delete Delete All

Formula Custom Ranges

@MEDAGECY

- Click in the first empty factor line, then transfer the variable **2005 Estimated Median Age** from the Population Quick Facts category.
- Click **OK**.

? PCensus has inserted our SiteScore (combined) dimension, as well as dimensions for the rank and target value of each factor to help you determine the relative contribution of each factor to the overall score.

Target List Settings

Library: Sample Lifestyles Sample Data

Lifestyle: SiteScore

Target Type: Block group

Lifestyle Dimensions: (double click on line to edit a dimension)

- SiteScore
- Score * 2: 2005 Estimated Median Hou.
- Value: 2005 Estimated Median Housef
- Score: 2005 Estimated Median Age
- Value: 2005 Estimated Median Age

New Lifestyle

New SiteScore

Edit Lifestyle

Edit Library

OK

Cancel

Help

- Click **OK** to close the **Target List Settings** dialog.
- In the task pane, click **Create Target Report for Whatcom County, WA**.

PCensus User's Guide

Rank	Whatcom County, WA Block group List	SiteScore	Score * 2: 2005 Estimated Median Household Income	Value: 2005 Estimated Median Household Income	Score: 2005 Estimated Median Age	Value: 2005 Estimated Median Age
1	530730011003	96	190	73,611	97	50
2	530730012004	92	178	63,298	98	52
3	530730104016	92	192	74,028	83	42
4	530730008029	91	200	92,297	73	41
5	530730104021	90	174	62,099	96	50
6	530730008015	90	184	68,101	86	44
7	530730104014	88	176	62,705	87	45
8	530730105013	87	194	74,432	68	40
9	530730001002	87	182	66,410	80	42
10	530730008014	86	188	70,975	70	40
11	530730104015	84	180	64,815	72	40
12	530730008021	81	196	79,167	47	37
13	530730104017	80	170	61,422	71	40
14	530730009002	80	158	57,701	82	42
Accepted	99 Targets	0		45,902		36
Rejected	0 Targets	0		0		0
Total	99 Targets	0		45,902		36

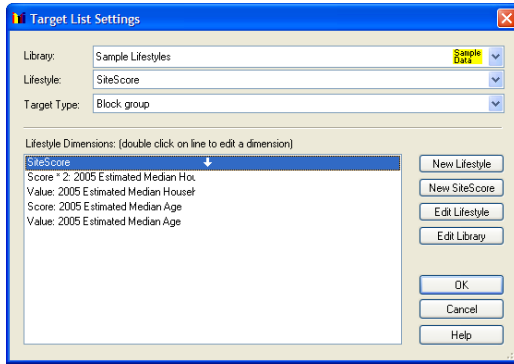
The first target in the list has a combined score of 97, representing scores of 194 for income (percentile weighted by 2) and 96 for age. Notice that among the highest ranked targets, some score relatively high for income and low for age, while in other cases the reverse is true.


Scoring with Custom Ranges

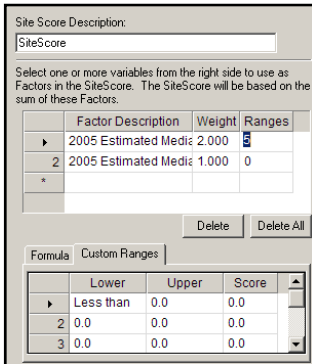
In the preceding example, we might wish to assign a high score to a specified range of incomes; for example we may only be interested in areas where the median income is between \$40,000 and \$60,000. In this case, instead of scoring by percentile value, we will assign scores as follows:

Range	Score
\$0 to \$30,000	10
\$30,000 to \$ 40,000	50
\$40,000 to \$60,000	100
\$60,000 to \$70,000	50
\$70,000 and higher	10

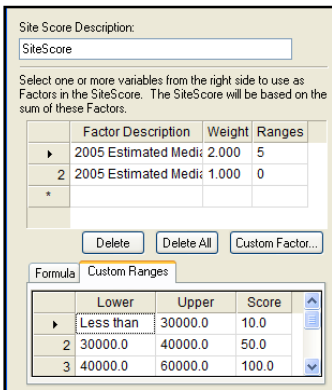
SiteScore - Scoring and Statistics



- Click  **Change default report settings...** in the Target List task pane.
- Double-click the **SiteScore** dimension to edit its definition.

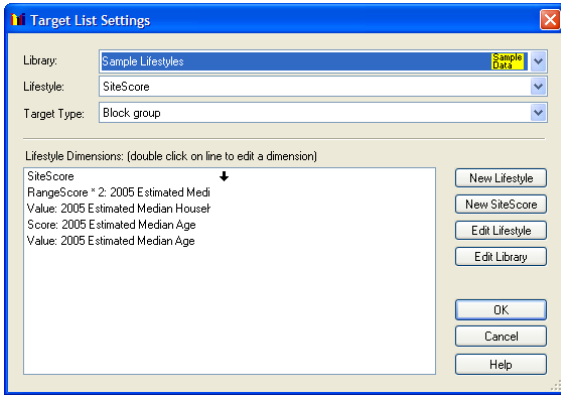


- Change the Number of Ranges for the median income factor to 5.



- Enter the custom ranges as shown.
- Click .

PCensus User's Guide



PCensus has updated the dimensions.

Click **Finish** and search the county at the block group level.

Rank	Whatcom County, WA Block group List	SiteScore	RangeScore * 2: 2005 Estimated Median Household Income	Value: 2005 Estimated Median Household Income	Score: 2005 Estimated Median Age	Value: 2005 Estimated Median Age
1	530730110004	100	200	50,000	99	53
2	530730109001	98	200	52,394	95	50
3	530730110002	98	200	52,857	94	49
4	530730004001	98	200	40,962	93	49
5	530730011001	97	200	52,193	92	49
6	530730008012	97	200	48,364	90	47
7	530730110003	96	200	44,136	89	46
8	530730108001	95	200	48,077	85	44
9	530730009002	94	200	57,701	82	42
10	530730106003	93	200	53,906	79	41
11	530730101005	93	200	50,735	78	41
12	530730003003	92	200	42,794	77	41
13	530730012003	92	200	51,300	76	41
14	530730001001	92	200	50,926	75	41
Accepted	99 Targets	0	200	45,902		36
Rejected	0 Targets	0	0	0		0
Total	99 Targets	0	200	45,902		36

The middle income targets now receive the highest scores.


What Can I Do Now?

- Experiment with using SiteScore dimensions in conjunction with SiteScan (page 105). This is useful for locating potential site locations when you have used modeling to determine multiple demographic factors that you expect to control the performance of a business location.

25 Print a Report

Background

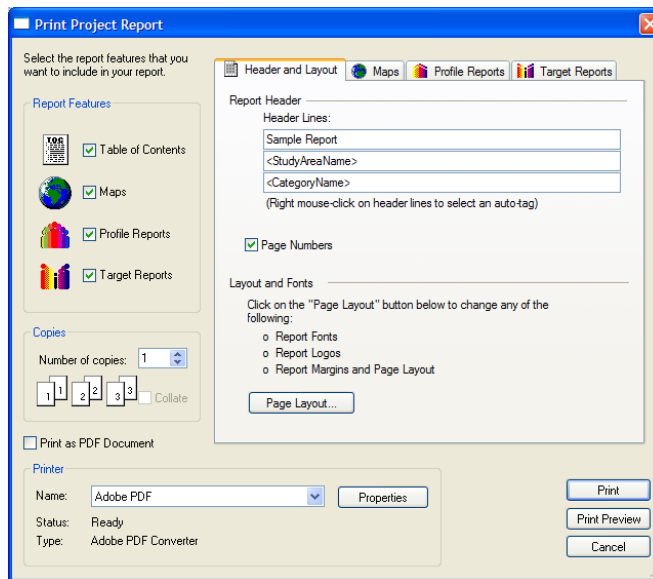
The Project Report feature was introduced in PCensus version 9. It allows you to print all the current components of the project in a single operation, avoiding the necessity of printing the maps and reports separately as in previous versions.

 If you wish, you can print the individual reports by clicking the drop-down arrow to the right of the print icon.

Steps to Print the Project Report

➤ Create a PCensus project that contains a selection of profiles, target lists and maps.

➤ Click  in the tool bar to display the **Print Project Report** dialog box.



Check the boxes on the left to include the required components:

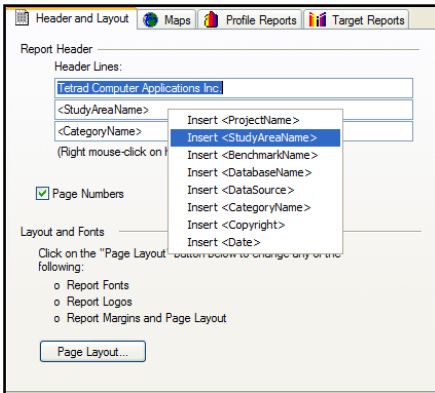
- Table of Contents.
- Maps.
- Profile Reports.
- Target Reports (if present).

PCensus User's Guide

Click on any of the four tabs to set up the items to be printed.

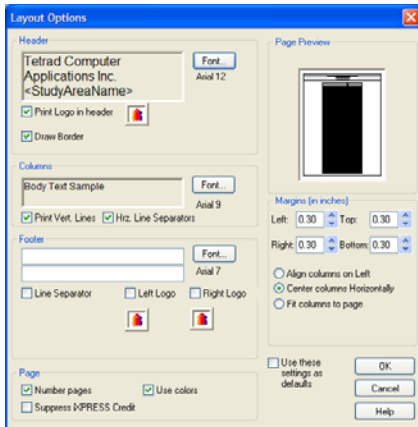
Header and Layout Tab

Enter the text that will appear in the three heading lines of each report page. The text you type will be printed verbatim unless you right-click in a box to select one of the available auto-tags:



The text inside the brackets will be replaced by the corresponding descriptions when the report is printed.

Click the Page Layout button to display the **Layout Options** dialog and select required fonts and graphical elements.



*The **Use these settings as defaults** check box saves the current layout settings for future sessions, including the contents of the Header Lines.*

Maps Tab

➤ Check the maps to include in the report.

Profile Reports

➤ Check the **Study Areas** and the **Categories** to be included

? You can highlight groups of categories by holding down the **Ctrl** key and clicking categories individually. Click in a highlighted check-box or press the **space bar** to check (or clear) the highlighted categories.

Target Reports

➤ Check the Study Areas for which target lists will be included in the report.

26 Export the Profile

Objective

Export the contents of a profile for use in other applications.

Background

The data in a PCensus project can be exported to a file format suitable for importing to a spreadsheet, database, or word-processing program.


Project export files contain all the descriptive and numerical information in the project.

Steps to Export a Profile

- Create a profile containing two or more study areas (for example a state and a ZIP code).

Pop Facts:	Washington	98226 Bellingham		
Demographic Quick Facts				
Population				
2010 Projection	6,669,710	39,727		
2005 Estimate	6,311,254	35,848		
2000 Census	5,994,121	30,941		
1990 Census	4,866,692	21,011		
Growth 1990 - 2000	21.11%	47.26%		
Households				
2010 Projection	2,571,628	15,248		
2005 Estimate	2,432,897	13,631		
2000 Census	2,271,398	11,594		
1990 Census	1,872,431	7,512		
Growth 1990 - 2000	21.31%	54.34%		
2005 Estimated Population by Single Race Classification				
White Alone	6,311,254	35,848		
Black or African American Alone	5,040,082	79.86%	29,584	82.53%
American Indian and Alaska Native Alone	211,644	3.35%	352	0.98%
Asian Alone	100,276	1.59%	2,402	6.70%
Native Hawaiian and Other Pacific Islander Alone	397,957	6.31%	1,641	4.58%
Some Other Race Alone	28,494	0.45%	59	0.16%
Two or More Races	281,026	4.45%	741	2.07%
	251,775	3.99%	1,069	2.98%

The **Profile** tab contains columns for Washington State and a ZIP code. To export the displayed data:

- Click the  to display the **Export Profile Totals** dialog box.

Export Profile Totals

Export Filename: C:\Program Files\Profile.htm

Categories: All Categories Selected Categories

Categories list:

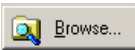
- Claritas Sample Database Table of Contents
- Pop Facts: Demographic Quick Facts
- Pop Facts: Population Quick Facts
- Pop Facts: Household Quick Facts
- Pop Facts: Demographic Snapshot
- Pop Facts: Census Demographic Overview
- Pop Facts: Household Trend/Inverse Totals

Options: Include Column Headers Include Horizontal Lines Include Percent Columns Format Number

File Format: Excel Spreadsheet HTML File Comma Delimited ASCII ASCII Text File

Report Header:

View Created File

- Click  to specify a filename and location for the exported data.
- Select one or more categories for export.
- For HTML or Spreadsheet output, edit the required **Report Header** fields.

PCensus User's Guide

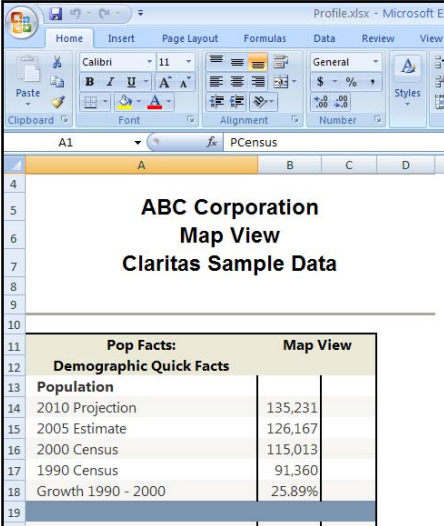
Select one of the available file types:

- Excel spreadsheet.
- HTML file (for use in a Web browser).

 For the above types, you can enter heading information to be included.

- Comma Delimited ASCII.
- ASCII text file.

For these types, you can select options for the range of data to be included.



The screenshot shows a Microsoft Excel spreadsheet titled "Profile.xlsx". The spreadsheet contains the following data:

Pop Facts:		Map View
Demographic Quick Facts		
Population		
2010 Projection	135,231	
2005 Estimate	126,167	
2000 Census	115,013	
1990 Census	91,360	
Growth 1990 - 2000	25.89%	

If you click **View Created File**, the default application for viewing the file type will start automatically (for example Microsoft Excel).

➤ Click to create the file.

27 Create a Pointfile

Objective

Export records for the individual counties in Washington State.

Background

A **Pointfile** is a database containing geographically referenced data. The pointfile contains a record for every target record whose internal point is inside your study area.

When you create a pointfile, you must select the geographic target type to be exported; for example, a pointfile record can represent a block group, census tract, county or state. The pointfile will contain a record for every target record whose internal point is inside your study area.

Each pointfile record contains the following information:

- **Area name.** For the target (for example county or place name).
- **Code.** A code suitable for linking with other databases or map files. This is usually a standard census area code (FIPS code for U.S. census areas), or a postal ZIP or FSA code.
- **Longitude and latitude.** Coordinates for the target's internal point. This information lets you use the file directly with many mapping systems.
- **Data columns.** For each variable in a selected category. These are normally numeric, unless the data variable evaluates to text (as is the case for “dominant group” variables).
- **Status Field.** This is a character field containing one character for each of the exported variables. The characters are normally all ‘0’s, unless the corresponding variable contains an invalid result (for example an invalid formula, a number too large to be represented, or a division by zero), in which case the character is set to ‘1’.

Data are exported from PCensus by category. Each category is exported to a separate database table. If a category contains multiple columns, each column is exported to a separate table.

Databases can be exported in the following formats:

- For Microsoft Access, a single database is created, containing tables for each exported category or category column.

PCensus User's Guide


- For Microsoft Excel, a single workbook is created, containing worksheets for each exported category or category column.
- For dBase or CSV (text with comma separated values), a folder is created, containing files for each exported category or category column.

Limitations

It is possible to export several categories simultaneously. Depending on the selected format, restrictions may be imposed on the number of variables (fields) in a category, or the number of categories that can be exported simultaneously.

The limitations on variable and field counts are imposed by the external database drivers that create the exported files; exceeding these limitations may result in unexpected error messages, although PCensus will attempt to continue processing other categories.

All output formats are limited to 255 columns per table. If an exported category contains more than this number of variables, excess variables will be omitted. No warning is displayed when this occurs.

 *You can reduce the number of variables to be exported from a category by clearing the checkboxes for unwanted variables in the Structure dialog (see page 132).*

Most formats (except dBase) permit column headings of up to 64 characters. When this limit is exceeded, the headings will be abbreviated. For example:

2004 Estimated Population by Single Race Classification: White Alone

will be abbreviated to

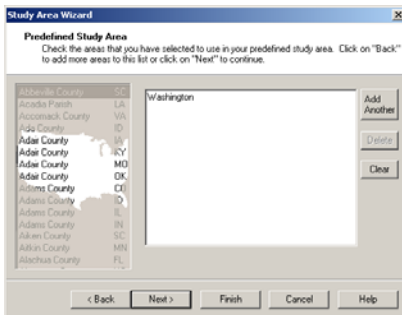
2004 Estimated Population by Si~ace Classification: White Alone.

Exporting large numbers of categories simultaneously may significantly slow the search process.

The following table may assist you in selecting a suitable export format.

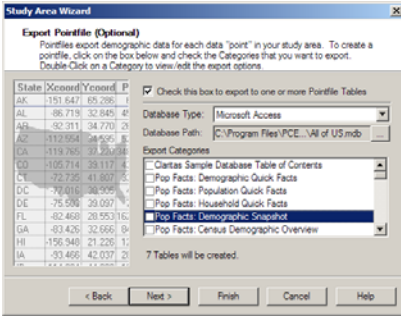
Format	Advantages	Disadvantages
Microsoft Access	Descriptive Variable names. Multiple output tables stored in a single database.	Limited to 64 category tables or less, depending on content. Multiple categories significantly reduce performance.
Microsoft Excel	Descriptive Variable names. Multiple output tables stored in a single workbook.	Limited to 64 category tables or less, depending on content. Limited to 65,536 target records Multiple categories significantly reduce performance.
dBase	Fastest export, even with multiple categories. Unlimited number of category tables. Output tables stored as separate dBase files.	Cryptic variable names, limited to 10 characters due to dBase format.
CSV	Descriptive Variable names. Output tables stored as separate CSV tables. CSV files can easily be imported to many applications	Limited to 64 category tables or less, depending on content. Multiple categories significantly reduce performance.

Steps to Export a Pointfile



- Create a new project using the Study Area Wizard, and follow the steps to define a study area for Washington State.
- Click in each dialog to advance to the **Export Pointfile (Optional)** dialog box.

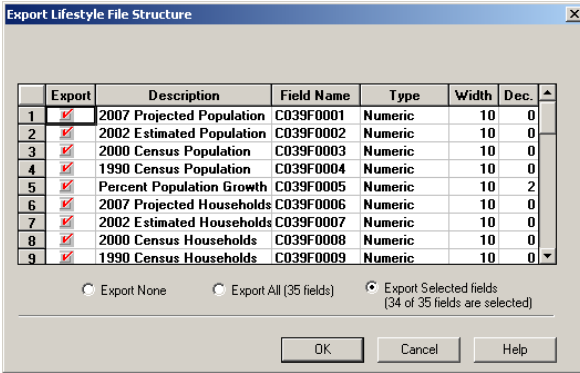
PCensus User's Guide



- Check Check this box to create a Pointfile to display the pointfile options.

The pointfile will be created with a default name and location as shown. If you want to change these:

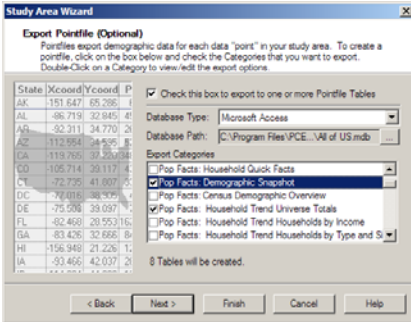
- Click to specify a filename and location for the exported data.



- Double-click a category to display the **Export File Structure** dialog box.

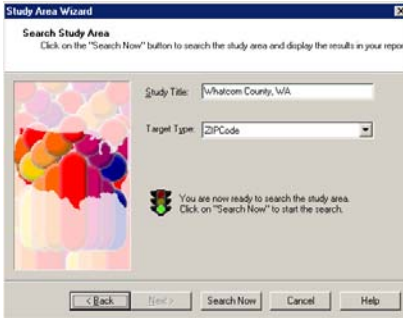
This dialog allows us to modify the structure of the exported pointfile. For example, we could change the variable name **C039F001** to **POP_07**. We can also clear selected check-boxes in the **Export** column to reduce the number of variables that are exported.

- Click .



- Select the categories to be exported, using the check-boxes.

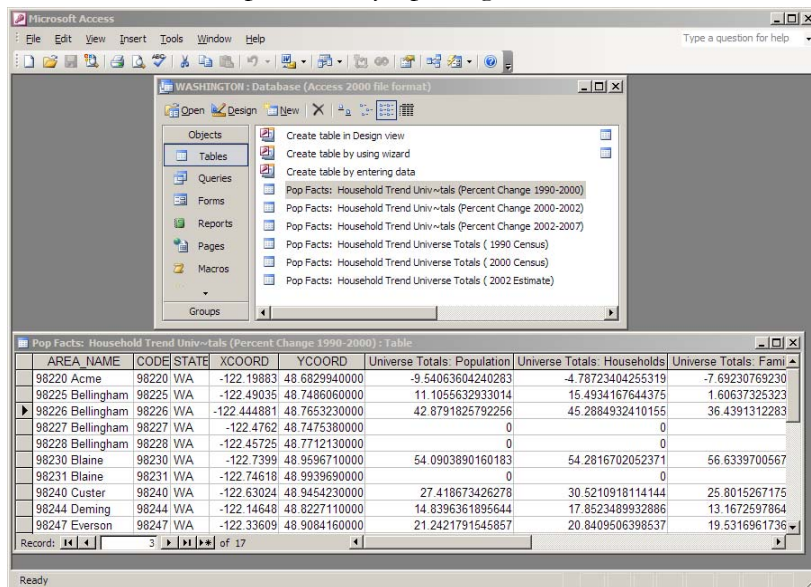
- Click to display the **Search Study Area** dialog box.



- Select **Target Type:** ZIPCode to indicate that we will be exporting ZIP code target records.
- Click **Search Now**.
- When the search is complete, click **Continue** to close the progress indicator.

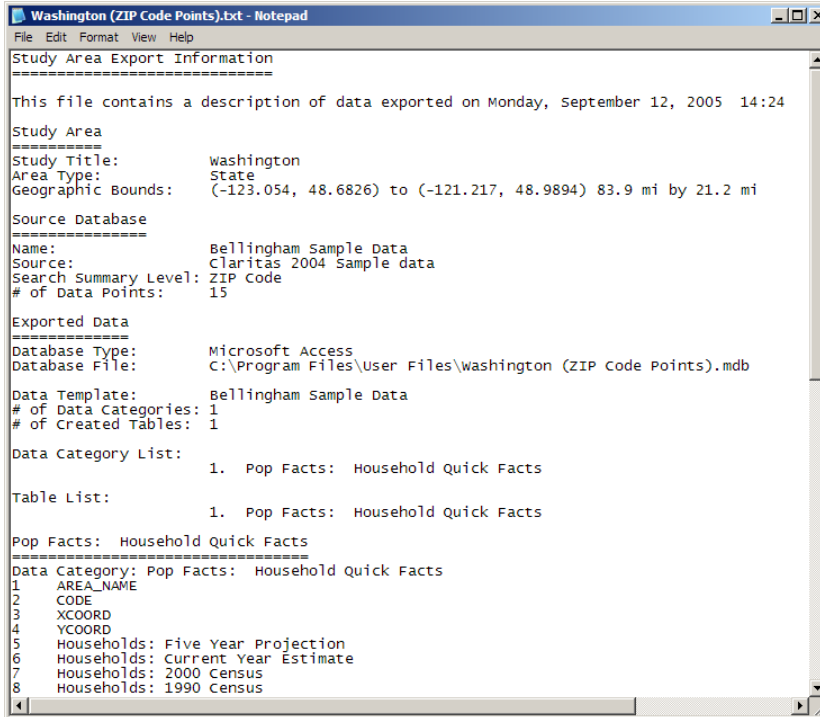
What Can I Do Now?

- View the created pointfile by opening it in Microsoft Access:



PCensus User's Guide

- View the descriptions of the included variables by opening the text file **Washington (ZIP Code Points).txt** in Notepad.



```
Washington (ZIP Code Points).txt - Notepad
File Edit Format View Help
Study Area Export Information
=====
This file contains a description of data exported on Monday, September 12, 2005 14:24

Study Area
=====
Study Title:      Washington
Area Type:       State
Geographic Bounds: (-123.054, 48.6826) to (-121.217, 48.9894) 83.9 mi by 21.2 mi

Source Database
=====
Name:            Bellingham Sample Data
Source:          Claritas 2004 Sample data
Search Summary Level: ZIP Code
# of Data Points: 15

Exported Data
=====
Database Type:   Microsoft Access
Database File:   C:\Program Files\User Files\Washington (ZIP Code Points).mdb

Data Template:   Bellingham Sample Data
# of Data Categories: 1
# of Created Tables: 1

Data Category List:
                1. Pop Facts: Household Quick Facts

Table List:
                1. Pop Facts: Household Quick Facts

Pop Facts: Household Quick Facts
=====
Data Category: Pop Facts: Household Quick Facts
1  AREA_NAME
2  CODE
3  XCOORD
4  YCOORD
5  Households: Five Year Projection
6  Households: Current Year Estimate
7  Households: 2000 Census
8  Households: 1990 Census
```

28 Export the Target List

Objective

Export the contents of a target report in a format suitable for importing into other applications.

Background

You can export the results of a Target List project to the following file formats:

- **DBase File:** This file format is similar to the Pointfile format (page 129). The exported data fields correspond to the dimensions of the lifestyle.
- **Excel spreadsheet:** Allows display and manipulation of the exported data with Microsoft Excel.
- **HTML File:** Suitable for viewing in a web browser.
- **ASCII file:** Comma-delimited text file suitable for importing into a spreadsheet program.

Steps to Export the Target List

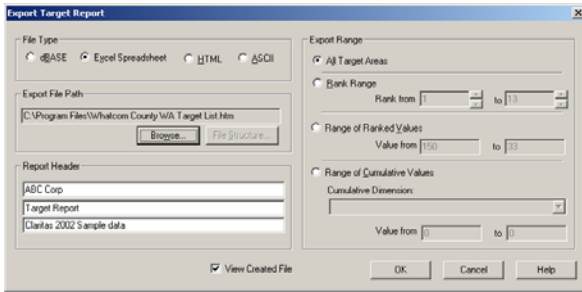
➤ Create a Target List, for example ZIP codes in Whatcom County (page 85).

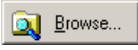
Rank	Whatcom County, WA ZIP code List	Percentage owner occupied housing units	Expenditure per household on gardening services	Total owner occupied housing units
1	98229 Bellingham	67.59	175	6,951
2	98230 Blaine	70.32	170	3,095
3	98264 Lynden	70.32	168	4,027
4	98226 Bellingham	71.56	163	8,297
5	98262 Lummi Island	78.61	162	305
6	98248 Ferndale	75.11	160	4,964
7	98240 Custer	81.35	155	820
8	98244 Deming	79.93	149	697
9	98247 Everson	73.80	146	1,958
10	98266 Maple Falls	77.78	142	672
11	98225 Bellingham	42.02	141	7,509
12	00072 National Forest/Park	8.33	135	2
13	98220 Acme	76.80	133	139
14	98295 Sumas	66.10	131	503
15	98761 Point Roberts	71.99	130	437
Accepted	15 Targets	63.24	158	40,376
Rejected	0 Targets	0	0	0
Total	15 Targets	63.24	158	40,376

To export the displayed data:

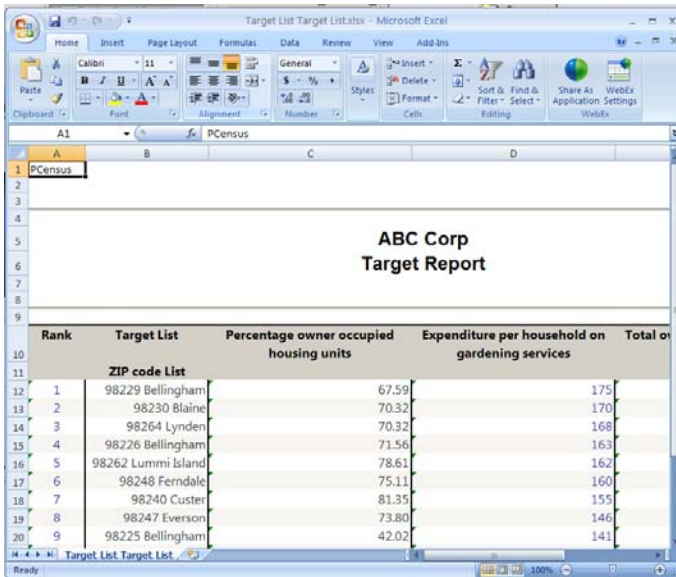
➤ Click the Export icon  to display the **Export Target Report** dialog box.

PCensus User's Guide




- Select the **File Type** that you want to create.
- Click  to specify a filename and location for the exported data.
- Make any required **Export Range** selections.

The setting of the **Toggle Filter** button  in the tool bar determines whether rejected targets will be included in the file.



If you click **View Created File**, the default application for viewing the file type will start automatically (for example Microsoft Excel).

- Click  to create the file.

What Can I Do Now?

- View the created pointfile by opening it in Microsoft Excel
- View the descriptions of the included variables by opening the text file (type **.MPO**) in Notepad

29 Save a Project to Microsoft Word

Objective

Save all the maps, reports, and graphs for a project to a Microsoft Word document.

Background

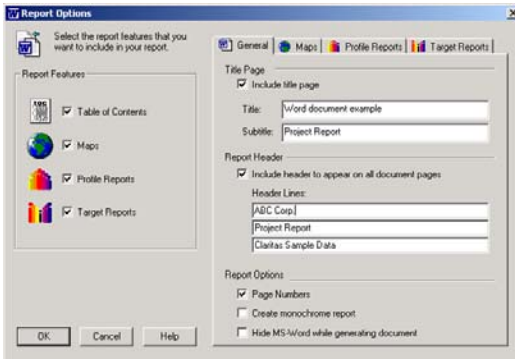
The Microsoft Word feature of PCensus lets you save the results of an entire project to a single document. This is often preferable to printing separate reports, maps, and graphs for each profile or target list. You can:


- Edit the document for layout, appearance and content.
- Print all the project's components in a single operation.
- Distribute the results of your project via email.
- Save the document for later use.

Prior Steps Required

- Create a PCensus project. To see a full range of the components that can be exported, the project should contain at least the following: a user-defined study area, a Target List and a Thematic Map.

Steps to Save a Project to Microsoft Word



- Click the **Word** icon  to open the **Report Options** dialog box.

PCensus User's Guide

Report Features

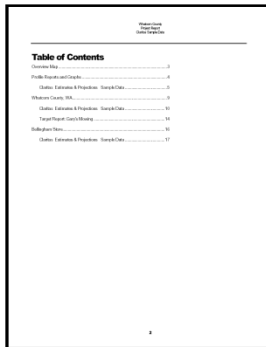
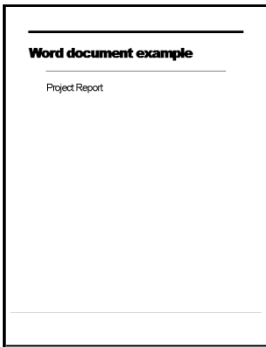
- Table of Contents
- Maps
- Profile Reports
- Target Reports

➤ Use the checkboxes in the **Report Features** panel to select the components to be exported.

Each component has a corresponding tab in the **Report Options** dialog box for selection of report details such as profile categories.

➤ Enter any required text for report headers or title page, and click **OK** to generate the Word document.

🔗 *Note: When exporting profile graphs to a Word document, set up the variables to be graphed in the Profile Graph window, and check the **Always Graph these Variables** check box to ensure that the correct graph is exported.*

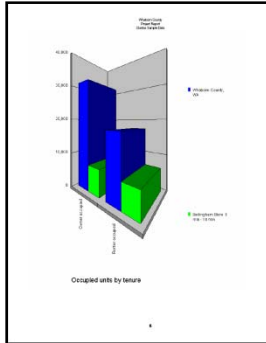


Demographic Overview Report - 2008 Estimates & Projections

Demographic Overview Report - 2008 Estimates & Projections

Demographic Overview Report - 2008 Estimates & Projections

Demographic Variable	2008 Estimate	2010 Projection	2015 Projection
Total Population	1,234,567	1,234,567	1,234,567
White	600,000	600,000	600,000
Black	200,000	200,000	200,000
Hispanic	100,000	100,000	100,000
Asian	50,000	50,000	50,000
Other	84,567	84,567	84,567



Demographic Overview Report - 2008 Estimates & Projections

Demographic Overview Report - 2008 Estimates & Projections

Year	White	Black	Hispanic	Asian	Other	Total
2008	600,000	200,000	100,000	50,000	84,567	1,034,567
2010	600,000	200,000	100,000	50,000	84,567	1,034,567
2015	600,000	200,000	100,000	50,000	84,567	1,034,567

Microsoft Word automatically starts generating and displaying your document. This process may take a few minutes to complete.

🔗 *The document is based on a Word template called **Report.dot**. This file is located in the PCensus folder. Advanced Word users may want to modify this template in order to customize the appearance of the reports.*

30 Refresh a Project Using a New Database

Objective

Open a saved project and refresh it using a different database.

Background

Many databases are updated on an annual basis, especially products that contain current year demographic estimates. Many users need to re-create their old projects each year to reflect the updated data.

The **Update Project Database** feature provides a quick method of refreshing a project with new data.

Some restrictions apply to the update process:

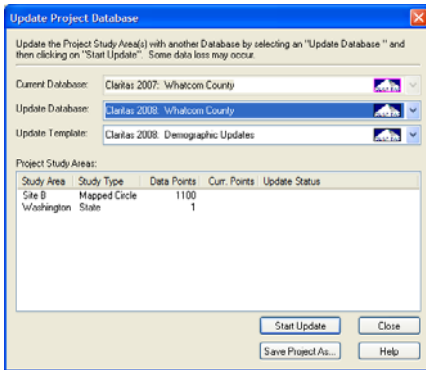
- If the new and old databases do not contain identical geographical components (block groups, counties, etc.) it may not be possible to update some types of study areas. For example, a project created with a 1990 vintage census database cannot be updated with a 2000 census database, as the definitions of block groups changed substantially between the two censuses. Fortunately, most year-to-year updates are generally compatible.
- Some project components (such as thematic maps) cannot be updated automatically - you must recreate them manually.

Steps to Update a Project

Pop Facts	Site B 0 - 1 mi	Site B 0 - 2 mi	Site B 0 - 3 mi	Washington
Population				
2012 Projection	15,065	46,645	76,525	6,756,189
2007 Estimate	14,355	43,495	71,305	6,402,264
2000 Census	13,375	38,855	65,931	5,884,121
1990 Census	12,721	32,742	51,385	4,866,692
Growth 1990-2000	5.15%	18.67%	23.64%	21.11%
Households				
2012 Projection	6,881	20,111	33,296	2,637,755
2007 Estimate	6,433	18,485	30,472	2,489,148
2000 Census	5,782	16,025	26,287	2,271,988
1990 Census	5,246	13,273	20,718	1,872,431
Growth 1990-2000	10.21%	20.74%	26.88%	21.31%
2007 Estimated Population by Single Race Classification	14,355	43,495	71,305	6,402,264
White Alone	12,587 87.68%	36,787 84.58%	61,135 85.74%	5,091,595 79.53%
Black or African American Alone	134 0.93%	536 1.23%	799 1.12%	215,100 3.36%
American Indian and Alaska Native Alone	293 2.04%	815 1.87%	1,192 1.67%	102,312 1.60%
Asian Alone	460 3.21%	2,242 5.13%	3,628 5.09%	410,247 6.41%
Native Hawaiian and Other Pacific Islander Alone	23 0.16%	109 0.25%	162 0.23%	29,125 0.45%

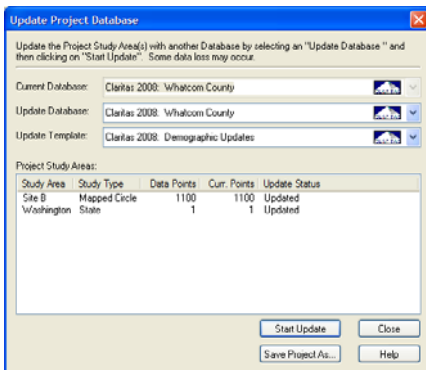
- Create and save a project containing study areas of various types using an obsolete database.
- Open the saved project.
- Select **Update Project Database...** from the Tools menu.

PCensus User's Guide




- Select an **Update Database** that will be used to refresh the project.
- Click 

❗ If you are updating a project to reflect changes in an imported database that has been refreshed with new data (page 205), the **Current Database** and the **Update Database** will be the same.



The dialog displays the status of the update process.

- When the update is complete, click 
- ❗ It is not advisable to replace the original project.
- Click 

Pop Facts:	Site B 0 - 1 mi	Site B 0 - 2 mi	Site B 0 - 3 mi	Washington
Population				
2013 Projection	15,086	47,052	77,079	6,523,730
2000 Estimate	14,340	43,800	71,765	6,523,730
2000 Census	13,374	38,854	63,547	5,894,121
1990 Census	12,720	32,741	51,397	4,866,692
Growth 1990-2000	5.14%	18.67%	23.64%	21.11%
Households				
2013 Projection	6,479	20,218	33,338	2,689,462
2008 Estimate	6,404	18,525	30,499	2,526,352
2000 Census	5,787	16,073	26,296	2,271,395
1990 Census	5,250	13,274	20,724	1,872,438
Growth 1990-2000	10.23%	20.74%	26.88%	21.31%
2008 Estimated Population by Single Race Classification	14,340	43,808	71,765	6,523,733
White Alone	12,548 87.51%	36,878 84.18%	61,263 85.37%	5,165,075 79.17%
Black or African American Alone	151 1.05%	607 1.39%	900 1.25%	221,202 3.39%
American Indian and Alaska Native Alone	296 2.06%	828 1.89%	1,213 1.69%	102,993 1.58%
Asian Alone	477 3.33%	2,372 5.41%	3,835 5.34%	431,530 6.61%
Native Hawaiian and Other Pacific	18 0.13%	92 0.21%	137 0.19%	20,752 0.31%

The Profile Browser contains the updated report.

What Can I Do Now?

- Transform a customized template to work with the new database (page 161).

31 Understanding the Profile Browser

Objective

This section describes the features of the Profile Browser.

Background

PCensus databases can contain very large sets of data variables. These variables are organized into **categories** that typically represent single pages of a multi-page report. All categories are populated simultaneously when you search a study area, and the results are displayed in a window called the Profile Browser.

This chapter describes the contents of the profile browser and the methods available for navigating through the categories.

Prior Steps Required

Create a project containing at least two study area profiles. In the examples illustrated below, we have used the **Claritas Sample Data** to display columns for Washington State and the city of Bellingham.

Templates and Categories

The Profile Browser consists of a **Description Column** containing text describing the displayed variables and any number of **Data Columns**. Each data column represents a study area.

The screenshot shows the Profile Browser interface with the following components:

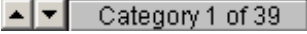
- Data Template Selector:** Located at the top right, it includes dropdown menus for 'Study Area' (Bellingham city, WA), 'Database' (Claritas Sample Data), 'Benchmark' (No Benchmark Sele), and 'Template' (Claritas Sample Data).
- Column Header Button:** A button located above the table columns, used to select which data columns to display.
- Category Selector:** A dropdown menu at the bottom of the table, currently showing 'Category 4 of 83'.

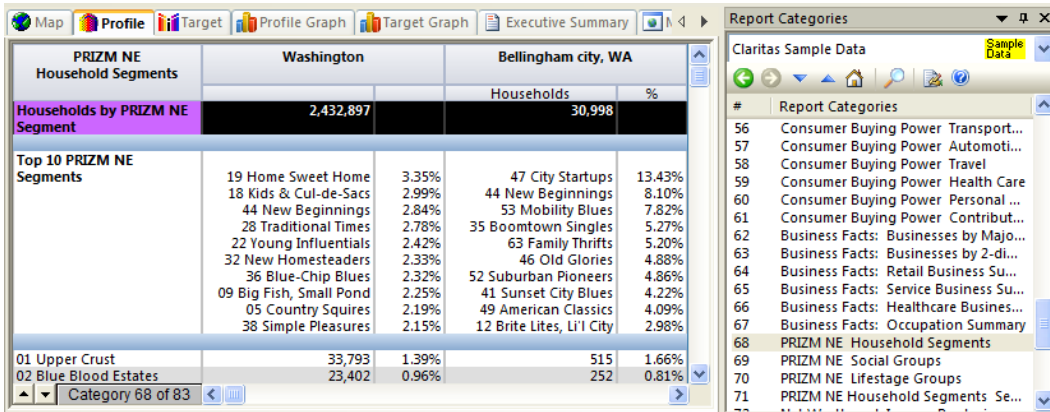
Pop Facts	Washington	Bellingham city, WA
Households		
2010 Projection	2,571,628	33,450
2005 Estimate	2,432,897	30,998
2000 Census	2,271,398	27,999
1990 Census	1,872,431	21,845
Growth 2005-2010	5.70%	7.91%
Growth 2000-2005	7.11%	10.71%
Growth 1990-2000	21.31%	28.17%
2005 Estimated Households by Household Income	2,432,897	30,998
Less than \$15,000	267,062 10.98%	6,100 19.68%
\$15,000 to \$24,999	241,673 9.93%	4,414 14.34%
\$25,000 to \$34,999	264,484 10.87%	4,182 13.49%
\$35,000 to \$49,999	368,834 15.98%	4,964 16.01%
\$50,000 to \$74,999	511,567 21.03%	5,343 17.24%

PCensus User's Guide

The contents of the profile browser are defined by a **Data Template**. Every PCensus database is installed with a standard template, and you can customize profiles by creating new templates (page 147).

If the database in use has more than one associated template, you can select the one you want using the **Data Template Selector**.

The profile may contain many categories of data, as shown by the Category selector . Click on the arrowheads to display the next or previous categories. To browse quickly through categories, click the **Report Categories** “fly-out button” in the right-hand margin.



PRIZM NE Household Segments		Washington		Bellingham city, WA	
		Households		%	
Households by PRIZM NE Segment		2,432,897		30,998	
Top 10 PRIZM NE Segments					
19 Home Sweet Home	3.35%	47 City Startups	13.43%		
18 Kids & Cul-de-Sacs	2.99%	44 New Beginnings	8.10%		
44 New Beginnings	2.84%	53 Mobility Blues	7.82%		
28 Traditional Times	2.78%	35 Boomtown Singles	5.27%		
22 Young Influentials	2.42%	63 Family Thrifts	5.20%		
32 New Homesteaders	2.33%	46 Old Glories	4.88%		
36 Blue-Chip Blues	2.32%	52 Suburban Pioneers	4.86%		
09 Big Fish, Small Pond	2.25%	41 Sunset City Blues	4.22%		
05 Country Squires	2.19%	49 American Classics	4.09%		
38 Simple Pleasures	2.15%	12 Brite Lites, Li'l City	2.98%		
01 Upper Crust	33,793 1.39%		515 1.66%		
02 Blue Blood Estates	23,402 0.96%		252 0.81%		

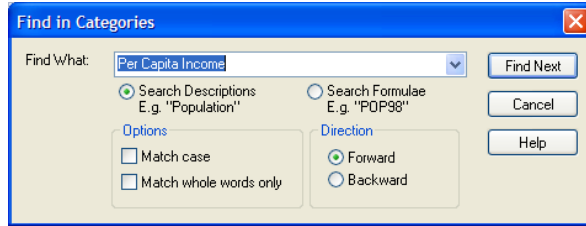
Report Categories

- Claritas Sample Data
- 56 Consumer Buying Power Transport...
- 57 Consumer Buying Power Automoti...
- 58 Consumer Buying Power Travel
- 59 Consumer Buying Power Health Care
- 60 Consumer Buying Power Personal ...
- 61 Consumer Buying Power Contribut...
- 62 Business Facts: Businesses by Major...
- 63 Business Facts: Businesses by 2-di...
- 64 Business Facts: Retail Business Su...
- 65 Business Facts: Service Business Su...
- 66 Business Facts: Healthcare Busines...
- 67 Business Facts: Occupation Summary
- 68 PRIZM NE Household Segments
- 69 PRIZM NE Social Groups
- 70 PRIZM NE Lifestage Groups
- 71 PRIZM NE Household Segments Se...

The data categories available depend on the source of the data and the specific components that you have purchased. The sample database illustrated contains data supplied by Nielsen Claritas Inc. and contains the following components:

- **Population Facts:** A selection of useful demographic data based on the U.S. Census.
- **Consumer Buying Power:** Estimates of total and per-household expenditure on a wide variety of products and services.
- **Business Summary Counts:** Counts of businesses and employees.
- **PRIZM:** Counts of households assigned to 66 demographic segments such as **Upper Crust** or **Shotguns & Pickups**.

If you don't know which category contains a specific data item, you can search for it.



- Select **Find** from the **Edit** menu, and enter the text to be found (for example “**per capita income**”).

The Percentage Column

When working with distribution data, for example, the distribution of household incomes, it is often useful to display the percentage of data in each class. Categories that include this type of data have a percentage sub-column to accommodate this.

Pop Facts: Household Quick Facts	Washington	Bellingham city, WA
2005 Estimated Households by Household Income	2,432,897	30,998
Less than \$15,000	267,062 10.98%	6,100 19.68%
\$15,000 to \$24,999	241,673 9.93%	4,444 14.34%
\$25,000 to \$34,999	264,484 10.87%	4,182 13.49%
\$35,000 to \$49,999	388,834 15.98%	4,964 16.01%
\$50,000 to \$74,999	511,567 21.03%	5,343 17.24%
\$75,000 to \$99,999	321,275 13.21%	2,663 8.59%
\$100,000 to \$149,999	292,585 12.03%	2,158 6.96%
\$150,000 to \$249,999	104,411 4.29%	888 2.86%
\$250,000 to \$499,999	29,025 1.19%	208 0.67%
\$500,000 or more	11,981 0.49%	48 0.15%
2005 Estimated Average Household Income	\$ 67,314	\$ 50,648
2005 Estimated Median Household Income	\$ 52,658	\$ 37,336
2005 Estimated Per Capita Income	\$ 26,277	\$ 21,756

The profile line containing the universe entry (total of all classes) is designated as the “percent base”, and the subsequent lines containing the distribution classes contain percentage entries calculated against the defined base.

Multi-Column Reports

The data categories we have seen so far contain a single numeric data column for each study area (with an optional percentage column). In many cases, it is useful to display additional columns, for example to allow side-by-side comparison of data from different years.

- Select the category **Pop Facts: Household Trend Households by Income** to see an example of a multi-column report.

PCensus User's Guide

Pop Facts: Household Trend	Bellingham city, WA					
	2000 Census	%	2005 Estimate	%	2010 Projection	%
Population	67,171		73,740		79,088	
Percent Change			9.78%		7.25%	
Households	27,999		30,998		33,450	
Percent Change			10.71%		7.91%	
Families	13,990		15,549		16,820	
Percent Change			11.14%		8.17%	
Housing Units	29,474		32,594		35,171	
Percent Change			10.59%		7.93%	
Group Quarters Population	4,593		4,697		4,762	
Percent Change			2.26%		1.38%	
Average Household Size	2.24		2.23		2.22	
Percent Change			-0.34%		-0.24%	
Income Totals						
Aggregate(\$MM) Household Income	1,264		1,570		1,866	
Percent Change			24.16%		18.87%	
Per Capita	\$ 19,379		\$ 21,756		\$ 24,036	
Percent Change			12.26%		10.48%	

Benchmarking Profile Columns

It is often desirable to compare the profiled results for a study area with another area called a **Benchmark**. We can define any number of study areas in a profile. Each area is displayed in a separate column so that we can view the results side-by-side in the browser.

PCensus allows you to designate an area as a **Benchmark** area against which other columns can be compared. An **Index** value is calculated for each variable, based on the selected benchmark value.

The available Benchmark areas include any study area in your project, as well as the database “Universe” (i.e. the United States).

- Select a Benchmark area from the pull-down list.

The screenshot shows the PCensus software interface. At the top, there are dropdown menus for 'Study Area: Bellingham city, WA', 'Benchmark: The United States', 'Database: Claritas Sample Data', and 'Template: Claritas Sample Data'. Below these, there are buttons for 'Map', 'Graph', 'Target Graph', and 'Executive Summary'. A red circle highlights the 'Benchmark' dropdown menu, which is currently set to 'The United States'. Below the menu, there is a table with columns for 'Washington' and 'Bellingham city, WA'. The table contains data for 'Population' and '2005 Estimated Population by Single Race Classification'. The 'Population' section shows values for 2010 Projection, 2005 Estimate, 2000 Census, and 1990 Census, along with growth percentages and index values. The '2005 Estimated Population by Single Race Classification' section shows counts and percentages for various racial groups, along with index values.

	Washington	Index	Bellingham city, WA	Index
Population				
2010 Projection	6,669,710		79,088	
2005 Estimate	6,311,254		73,740	
2000 Census	5,894,121		67,171	
1990 Census	4,866,692		53,834	
Growth 2005-2010	5.68%	117	7.25%	150
Growth 2000-2005	7.08%	119	9.78%	165
Growth 1990-2000	21.11%	160	24.77%	188
2005 Estimated Population by Single Race Classification	6,311,254		73,740	
White Alone	5,040,082	79.86%	63,399	85.98%
Black or African American Alone	211,644	3.35%	867	1.18%
American Indian and Alaska Native Alone	100,276	1.59%	1,121	1.52%
Asian Alone	397,957	6.31%	3,699	5.02%
Native Hawaiian and Other Pacific Islander Alone	28,494	0.45%	156	0.21%
Some Other Race Alone	281,026	4.45%	1,876	2.54%
Two or More Races	251,775	3.99%	2,622	3.56%

Understanding the Profile Browser

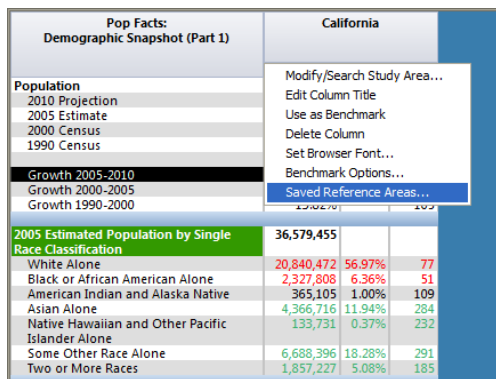
When a Benchmark has been selected, an **Index** sub-column is displayed for each study area, showing the values calculated as percentages of the benchmark. Results are color-coded to highlight differences.

 To change the color-scheme, left-click a column header button to select **Benchmark Options**.

Saving Reference Areas

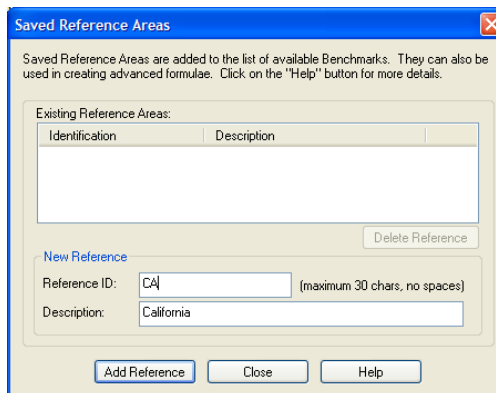
Any area represented by a profile report column can be saved as a **Reference Area** that can be used as a benchmark area in future projects. For example, we can save the State of California as a reference area.

- Create a Profile column for the State of California.



Pop Facts: Demographic Snapshot (Part 1)	California		
Population			
2010 Projection			
2005 Estimate			
2000 Census			
1990 Census			
Growth 2005-2010			
Growth 2000-2005			
Growth 1990-2000			
2005 Estimated Population by Single Race Classification	36,579,455		
White Alone	20,840,472	56.97%	77
Black or African American Alone	2,327,808	6.36%	51
American Indian and Alaska Native	365,105	1.00%	109
Asian Alone	4,366,716	11.94%	284
Native Hawaiian and Other Pacific Islander Alone	133,731	0.37%	232
Some Other Race Alone	6,688,396	18.28%	291
Two or More Races	1,857,227	5.08%	185

- Click in the column header for California and select **Saved Reference Areas** from the displayed menu.



Saved Reference Areas are added to the list of available Benchmarks. They can also be used in creating advanced formulae. Click on the "Help" button for more details.

Existing Reference Areas:	
Identification	Description

New Reference

Reference ID: (maximum 30 chars, no spaces)

Description:

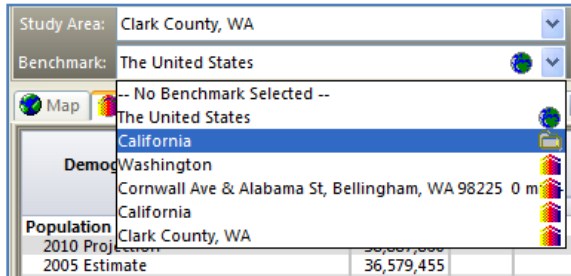
- Change the **Reference ID** to a symbolic name such as **CA** (optional).

- Click




PCensus User's Guide

- ❓ *The saved reference area will only apply to projects created with the current database. Each database has its own set of reference areas. The Reference ID can be used in template and lifestyle formulae as an “operator” (see page 158).*

- Create a new study area (e.g., Clark County, WA).



- Select the saved reference area as a benchmark.

- ❓ *The folder icon  identifies California as a saved reference area, as opposed to the United States “universe”  or a study area  in the current project.*

What Can I Do Now?

- **Customize the Profile:** You can organize the profile browser to suit your specific needs. For example, if the items that interest you are normally contained in different categories, you can create a new category which contains only these items (page 147).

32 Customizing the Profile

Objective

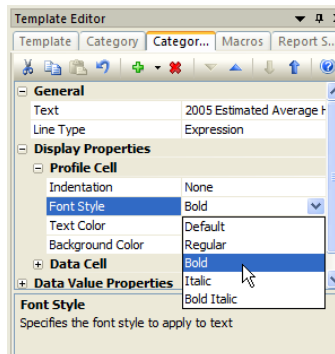
Use the **Data Template Editor** to customize the content and appearance of the profile browser, printed reports and exported files.


Background

Every PCensus database is installed with a **Data Template** that defines the content and appearance of the Profile browser (page 141). The template editor lets you create a new template containing categories specific to your needs, select variables to be displayed, and organize and enhance the appearance of profiles by specifying properties such as text style, color and indentation.

The data template defines the content of data files exported from PCensus for use in other applications, so you can use the template editor to create customized export files.

The current version of the PCensus template editor uses “property sheets” in place of the tabbed dialog box used in earlier versions. Property sheets permit a more intuitive organization of the available editing options.



Property sheet entries behave differently for different functions. For example, the entry “**Text**” allows you to type information to be displayed, while “**Font Style**” provides a pull-down selection. Other entries may contain a button  to display a more complex dialog control.

Controls in the property sheet are hidden until they are selected by clicking inside them.

The “+” and “-” check-boxes respectively expand and collapse sections of the property sheet to hide rarely-used advanced settings until they are needed.

Prior Steps Required

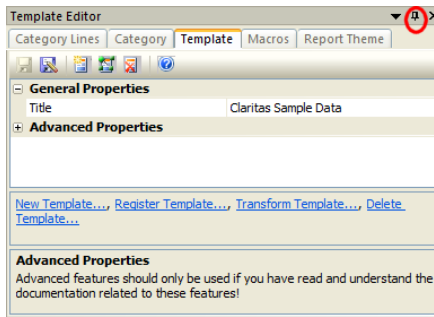
- Read the chapter **Understanding the Profile Browser**, (page 141).
- Create a project using the **Claritas Sample Data** and containing two profiled study areas (for example, the State of Washington and Bellingham city).

Create a New Template

ⓘ *The standard data templates provided with PCensus databases cannot be modified by the template editor. If you make changes to them, you will be prompted to save your changes to a new template.*

For the purposes of this tutorial, we will create a new template.

- Click the **Edit Report Template** icon  to display the **Template Editor** pane.

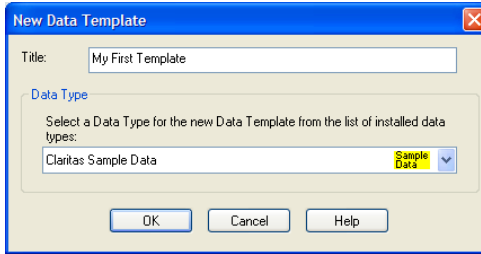


- Click the auto-hide pushpin icon  to lock the dialog in position.

The **Template Editor** pane contains the following tabbed pages:

Category Lines	Control contents and appearance of individual lines (text and numerical content, font, indentation. etc.)
Category	Control contents and appearance of entire category (Category title, columns and sub-columns).
Template	Control properties of the entire template (title, links to database)
Macros	Define macros for shorthand representation of complex formulae.
Report theme	Control the overall appearance of reports (default fonts, shading, etc.)

- Select the **Template** tab and click the **New Template...** link.



- Enter a title for your template (for example, **My First Template**).

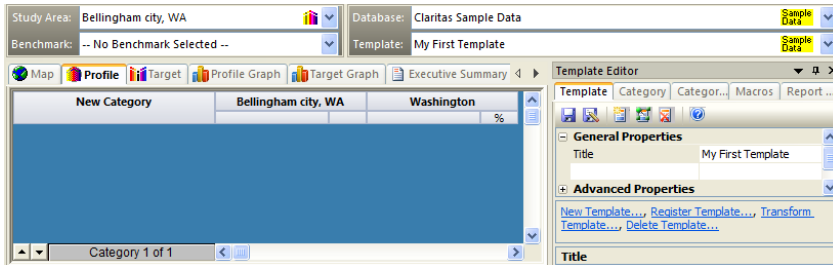
The title you enter will appear in the **Data Template Selector** (page 141).

- Select the **Claritas Sample data** data type.

ⓘ Because all PCensus databases contain different sets of variables, a custom template can only be used with the database for which it was created – in this case the **Claritas Sample Data**. This selection means that you can use your customized template for any project that uses the **Claritas Sample Data**.

- Click **OK**.

The new template contains a single category with no data lines.

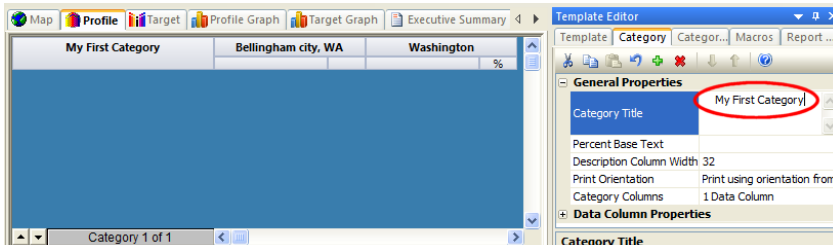


Edit the Category Heading

- Select the **Category** tab in the Template Editor.

The new template contains a single, empty category called “**New Category**”.

- Edit the **Category Title, (My First Category)**.



PCensus User's Guide

Note that as soon as you press **Enter**, the corresponding heading in the profile browser is updated.

Paste lines into a Category

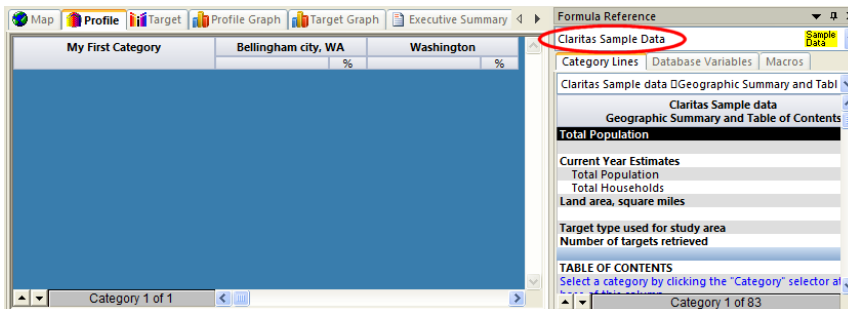
There are several methods for creating detail lines in a template category. The simplest and most intuitive method is to copy or drag lines from an existing template.

❓ The **Formula Reference** panel provides a convenient source of “ready-made” formulae. The Formula Reference panel contains a formatted list of all the data items in a selected template.

➤ Click the **Formula Reference** fly-out button in the right-hand margin of the PCensus window and lock it in position with the  pushpin icon.

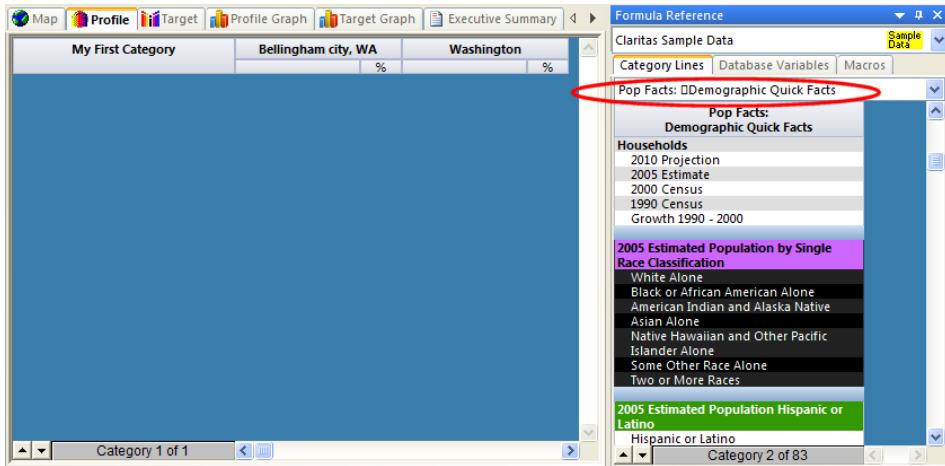
❓ As you become familiar with the interface, you will find that fly-outs can be used quickly and efficiently without locking.

➤ Select the template that contains the line or lines you wish to copy (in this case “**Claritas Sample Data**”).

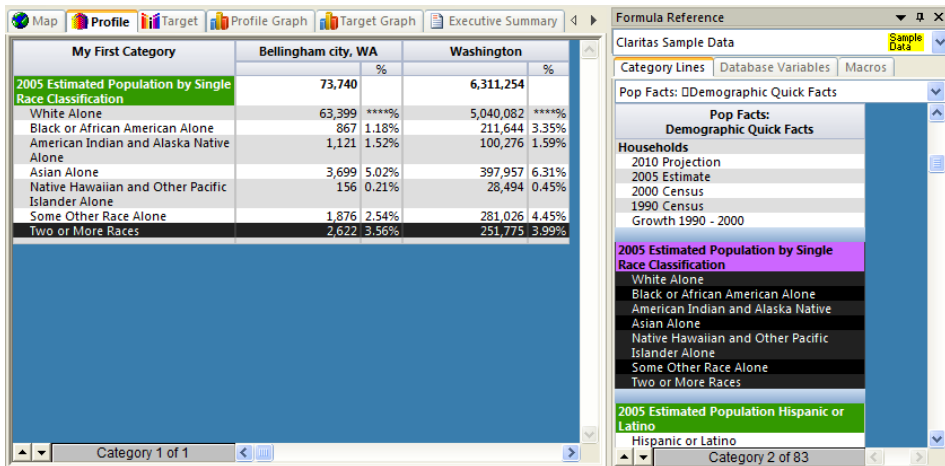


❓ Each data template refers to one specific database (In this case **Claritas Sample Data**). You cannot paste variables from a database into a template that refers to a different database.

- In the **Category Lines** tab, select the category containing the lines you wish to include in your custom template (e.g. **Demographic Quick Facts**), and highlight them by dragging the mouse.



- Drag the selected lines into the profile browser.











❗ In the illustration, note that the default column widths do not allow the percentage values to display completely; they are replaced by asterisks. This can easily be corrected by dragging the vertical lines to increase the column width.

Organize the lines in a Category

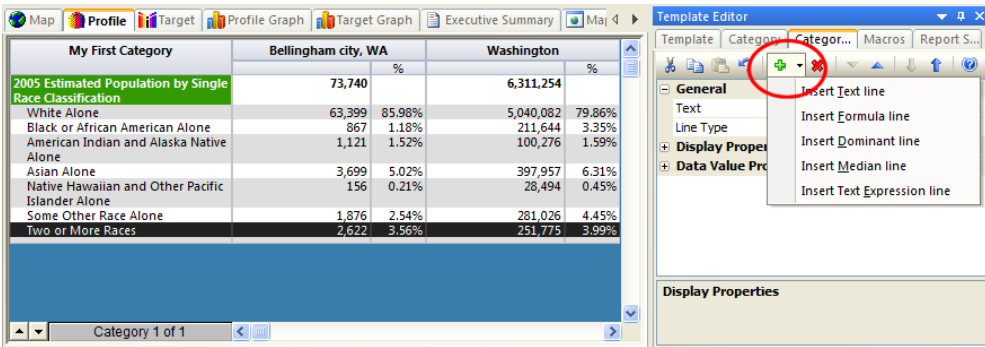
The **Category Lines** tab contains icons that allow you to control the contents of the category.

PCensus User's Guide

	Cut selected lines from the profile to the clipboard.
	Copy selected lines from the clipboard.
	Paste selected lines from the clipboard.
	Undo reverses the effect of your last change.
	Insert Line adds a detail line to the profile (use the pull-down to specify type of line).
	Delete the current line from the profile.
	Change the current line selection.
	Move the selected line(s) up or down in the profile.

Add Text to a Profile Category

- Click with the mouse to highlight a line in the profile browser.
- In the **Category Lines** tab of the Template Editor, click the arrow next to the **Insert Line** icon to display the types of line that can be inserted.




My First Category	Bellingham city, WA		Washington	
		%		%
2005 Estimated Population by Single Race Classification	73,740		6,311,254	
White Alone	63,399	85.98%	5,040,082	79.86%
Black or African American Alone	867	1.18%	211,644	3.35%
American Indian and Alaska Native Alone	1,121	1.52%	100,276	1.59%
Asian Alone	3,699	5.02%	397,957	6.31%
Native Hawaiian and Other Pacific Islander Alone	156	0.21%	28,494	0.45%
Some Other Race Alone	1,876	2.54%	281,026	4.45%
Two or More Races	2,622	3.56%	251,775	3.99%

- Select **Insert Text Line...** to create a new line in the browser after the selected line.

My First Category	Bellingham city, WA		Washington	
		%		%
2005 Estimated Population by Single Race Classification	73,740		6,311,254	
White Alone	63,399	85.98%	5,040,082	79.86%
Black or African American Alone	867	1.18%	211,644	3.35%
American Indian and Alaska Native Alone	1,121	1.52%	100,276	1.59%
Asian Alone	3,699	5.02%	397,957	6.31%
Native Hawaiian and Other Pacific Islander Alone	156	0.21%	28,494	0.45%
Some Other Race Alone	1,876	2.54%	281,026	4.45%
Two or More Races	2,622	3.56%	251,775	3.99%
New Text Line				

When the line is inserted, it contains the placeholder text **“New Text Line”**.


Double-click the text in the browser to edit the entry as required.

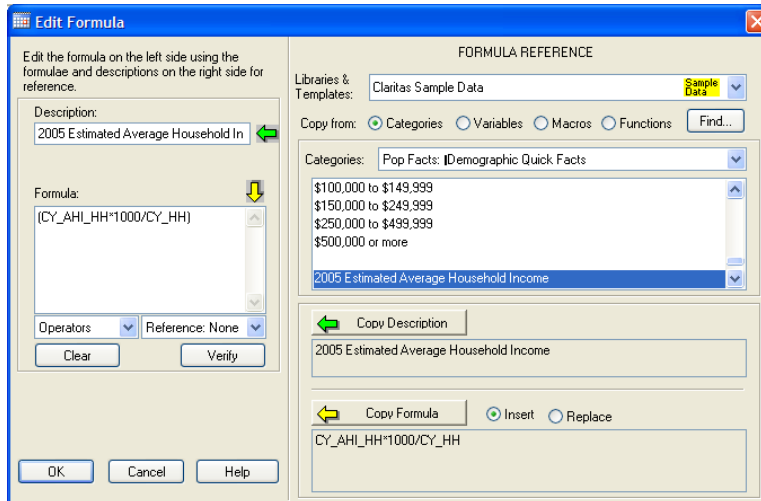
 *To insert a blank line in the profile, just insert a text line and delete all the text.*

Create New Detail lines


The **Detail Lines** in the profile browser can be any of the following:

Text line	Contains text in the description column, but no values in the study area columns.
Formula line	Contains text in the description column and numeric values in the study area columns.
Median Line	A special type of formula line that displays a median value (e.g. median household income) computed from the distribution of incomes.
Dominant or Top "n" Line	Contains text in the description column and the study area columns. Identifies the dominant member or members of a group of formulae.
Text Expression Line	Contains Text in the description column, and the results of a text expression in the study area column.
Separator line	Line drawn to break up the category into smaller groups.
Page Break line	Forces a new page in printed reports.

- Use the **Insert Line** icon  to add a **Numeric Expression Line** to the profile and display the **Edit Formula** dialog box.



- Check that the **Claritas Sample Data** is selected in the **Libraries & Templates** list.

 *This is the template from which we will copy the formula.*

- Click the  button and locate the text **Average Household Income**.

PCensus User's Guide

- Double-click **2005 Estimated Average Household Income** to insert the formula and description in the left-hand panel.
- Click .

My First Category	Bellingham city, WA		Washington	
		%		%
2005 Estimated Population by Single Race Classification	73,740		6,311,254	
White Alone	63,399	85.98%	5,040,082	79.86%
Black or African American Alone	867	1.18%	211,644	3.35%
American Indian and Alaska Native Alone	1,121	1.52%	100,276	1.59%
Asian Alone	3,699	5.02%	397,957	6.31%
Native Hawaiian and Other Pacific Islander Alone	156	0.21%	28,494	0.45%
Some Other Race Alone	1,876	2.54%	281,026	4.45%
Two or More Races	2,622	3.56%	251,775	3.99%
New text line				
2005 Estimated Average Household Income	50,648		67,314	

❓ You can double-click any value entry in the profile to display the Edit Formula dialog and view the underlying formula.

Formatting Lines in the Profile

Formatting can enhance the appearance and readability of the profile browser. Here are some suggestions:

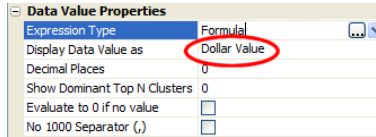
- Use bold lettering for headings.
- Indent groups and sub-groups of data.
- Use color or italics to emphasize specific lines.

❓ The default appearance of the Profile, for example alternate line shading, is determined by the current report style, as selected in the **Report Styles** tab of the template editor.


- Expand the **Display Properties** and **Profile Cell** sections in the **Category Lines** tab. Note that the **Data Cell** section allows formatting changes in the Data columns of the profile.
- Highlight a line in the profile, and change the **Font Style** to **Bold**.

❓ Notice that the change is immediately reflected in the browser. All of the formatting controls (for example **Font Style** and **Text Color**) can be applied to multiple selected lines.

The **Data Value Properties** entries in the Category Line tab control the contents of the profile's data columns.




For example:

- Click the  button in the Expression Type entry to display the Edit Formula dialog.
- Set **Display Data Value as** to “**Dollar Value**” to add a “\$” sign to a numeric value.
- Change the number of decimals to display for a numeric value.

Entering a negative number of decimal places will round the value to the specified level. For instance, **-3** will cause the value **1,234,567** to display as **1,235,000**

The **Percent/Index Properties** entries let you identify a line as a **Percent Base** or a **Percent of...** value in the percentage column (page 164).

 *The entries in the **Export** tab do not affect the appearance of the profile. They define the format of the Pointfile (page 129) that will be exported when this category is selected for export.*


Saving Your Changes

PCensus will automatically prompt you to save the changes to your customized template when you close the project or select another template. You can also save your work at any time by clicking the **Save Template** icon



Advanced Data Types in the Profile

PCensus provides special types of data items that can be used in Profile reports (and Lifestyles): the **Median** and the **Dominant Group**.

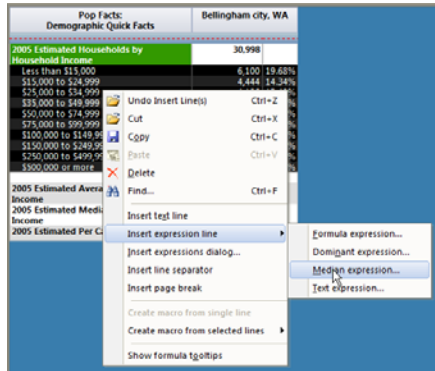
 *Although the template editor provides the necessary tools to create these types, it is more likely that you will be able to paste suitable entries from a supplied template. However, we will briefly describe the ways in which the types are implemented.*

To see how these data types are used, select the **Claritas Sample Data** in the **Template Selector**.

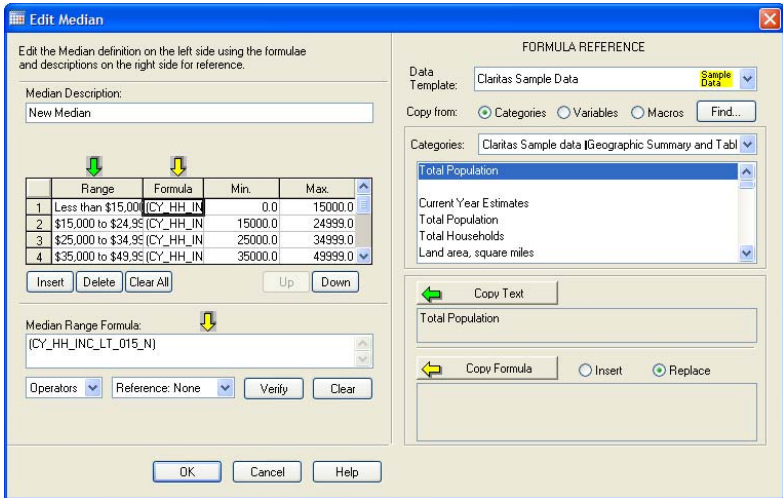
Median Values

The **Median** value type allows calculation of medians based on the distribution of values in a population.

The *Median* is an important statistical measure indicating the mid-point of a distribution. For example, if the *Median Household Income* in an area is **\$50,000, there are equal numbers of households above and below this level.**



- In the **Pop-Facts: Demographic Quick Facts** category, highlight all the income ranges as shown by dragging the mouse cursor.
- Right-click in the highlighted selection and select **Insert Expression Line** and **Median Expression**.



The **Edit Median** dialog box associates each variable that defines a distribution class with the limits of the class. The associations are populated automatically, using the data for each selected class in the profile. For

example, **CY_HH_INC_LT_015_N** represents the number households with income in the range \$0 to \$15,000.

PCensus uses this information to calculate the income level where there are equal numbers of households with lower and higher incomes. This value is displayed as the **Median**.

- Click to insert the **New Median** line in the profile.

Pop Facts: Demographic Quick Facts	Bellingham city, WA	
2005 Estimated Households by Household Income	30,998	
Less than \$15,000	6,100	19.68%
\$15,000 to \$24,999	4,444	14.34%
\$25,000 to \$34,999	4,182	13.49%
\$35,000 to \$49,999	4,964	16.01%
\$50,000 to \$74,999	5,343	17.24%
\$75,000 to \$99,999	2,663	8.59%
\$100,000 to \$149,999	2,158	6.96%
\$150,000 to \$249,999	888	2.86%
\$250,000 to \$499,999	208	0.67%
\$500,000 or more	48	0.15%
New Median	37,336	
2005 Estimated Average Household Income	\$ 50,648	
2005 Estimated Median Household Income	\$ 37,336	
2005 Estimated Per Capita Income	\$ 21,756	

? The median values in the original template are implemented as Macros; this allows them to be used in mathematical formulae. Double-click on the value for **2005 Estimated Median Household Income** to see an example. For information on the use of macros, search for the word "macro" in the PCensus Help system.

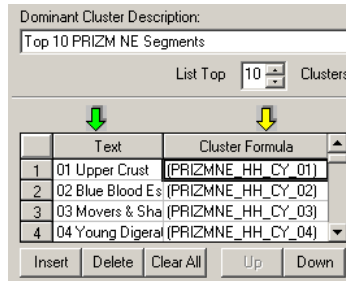
Dominant Groups

The **Dominant group** or **Top "n"** value type provides a method to display descriptive rather than numerical information in a profile. When a database contains grouped variables such as age ranges, income ranges, or cluster segments, we may want to display the name of the group that has the greatest number of entries.

- Select **Top 10 PRIZM Segments** in the profile.

PRIZM NE Household Segments	Bellingham city, WA	
	Households	%
Households by PRIZM NE Segment	30,998	
Top 10 PRIZM NE Segments	47 City Startups	13.43%
	44 New Beginnings	8.10%
	53 Mobility Blues	7.82%
	35 Boomtown Singles	5.27%
	63 Family Thrifts	5.20%
	46 Old Glories	4.88%
	52 Suburban Pioneers	4.86%
	41 Sunset City Blues	4.22%
	49 American Classics	4.09%
	12 Brite Lites, LI City	2.98%

- Double-click on the selected entry (in the data column) to display the **Edit Dominant Cluster** dialog box.



This dialog identifies the variables defining each member of the group. For example, **PRIZMNE_HH_CY_01** represents the number of households assigned to the PRIZM segment “**01 Upper Crust**”.

PCensus evaluates the formula for each group, and displays the specified **Top n** results in a sorted list in the Profile column.

Benchmark and Universe “Operators”

Sometimes we may want to create a template formula that references a value for an area other than the current study area. For example, in the **Consumer Buying Power** report, we need to calculate market indexes relative to the United States. This is accomplished by including special “operators” in the formula. The available operators are:

- **Universe** - The total scope of the database (All of the United States or Canada).
- **Benchmark** - the currently defined benchmark area (see page 144). If no benchmark is selected, this defaults to the **Universe**.
- **Reference Area** - The “Reference ID” of a saved reference area (e.g. **CA**) (see page 145).

The reference operator may be prepended to any variable name in a formula. For instance, the index of total expenditure (**CBP_C001**) relative to the United States would be calculated thus:

(CBP_C0001/CY_HH)/(Universe.CBP_C0001/Universe.CY_HH)*100

Multi-Column Reports





The formatting of multi-column reports is complex, and you should be comfortable with the basic operation of the template editor before you attempt to create or modify them.

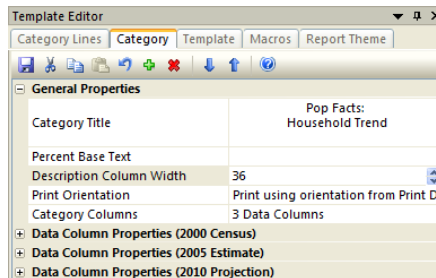
In a multi-column report, each detail line can have two or more formulae associated with it, each formula defining an entry in the respective column. Each column has its own characteristics, such as the presence or absence of “percentage” entries.

As an example, select the **Pop Facts: Household Trend** report.

Pop Facts: Household Trend	Bellingham city, WA					
	2000 Census	%	2005 Estimate	%	2010 Projection	%
Population	67,171		72,710		79,063	
Percent Change			9.78%		7.25%	
Households	27,999		30,998		33,450	
Percent Change			10.71%		7.91%	
Families	13,990		15,549		16,820	
Percent Change			11.14%		8.17%	
Housing Units	29,474		32,594		35,171	
Percent Change			10.59%		7.91%	
Group Quarters Population	4,593		4,697		4,762	
Percent Change			2.26%		1.38%	
Average Household Size	2.24		2.23		2.22	
Percent Change			-0.34%		-0.24%	
Income Totals						
Aggregate(\$MM) Household Income	1,264		1,570		1,866	
Percent Change			24.16%		18.87%	
Per Capita	\$ 19,379		\$ 21,756		\$ 24,036	
Percent Change			12.26%		10.48%	
Households by Household Income	28,012		30,998		33,450	
Less than \$15,000	6,314	22.54%	6,100	19.68%	6,002	17.94%
\$15,000 to \$24,999	4,476	15.98%	4,444	14.34%	4,449	13.30%
\$25,000 to \$34,999	3,962	14.14%	4,182	13.49%	4,233	12.65%
\$35,000 to \$49,999	4,530	16.17%	4,964	16.01%	5,226	15.62%
\$50,000 to \$74,999	4,654	16.61%	5,343	17.24%	5,908	17.66%
\$75,000 to \$99,999	1,847	6.59%	2,663	8.58%	3,171	9.48%

This report contains columns for three different years, each with a percentage sub-column.

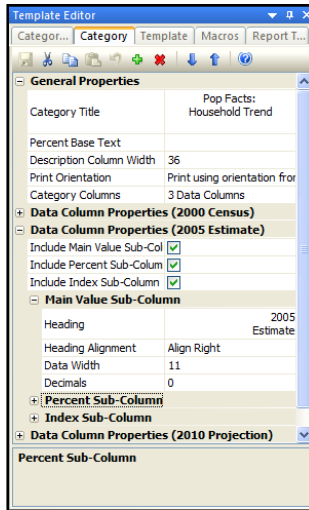
The **Category** tab of the template editor includes controls to add , remove , or re-order   the data columns. There is a separate **Data Column Properties** entry for each column.



PCensus User's Guide

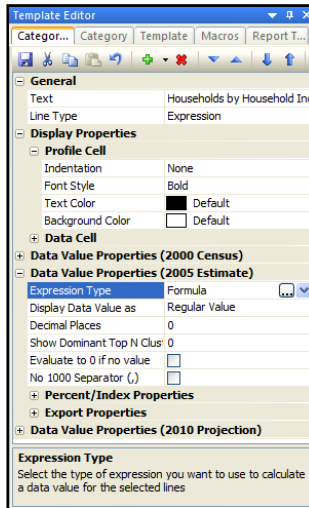
❓ The **Category** tab contains controls that affect the entire category (Category title, number of columns and sub-columns, etc.)

➤ Expand the entry for a column to see the settings for the column and its sub-columns.



The **Category Lines** tab contains corresponding entries to define the contents and appearance of data values in each column.

❓ The **Category Lines** tab contains controls that affect the individual lines in a category (Formulae, formatting, etc.)

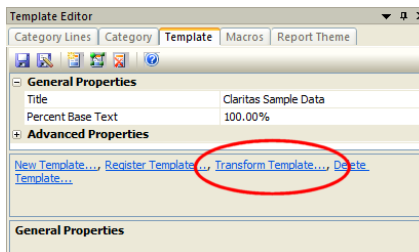


❓ Note: A quick way to review or change the definition of a numeric value in the report is to double-click the entry in the profile browser. This will display the **Edit Formula** dialog box for the selected entry.

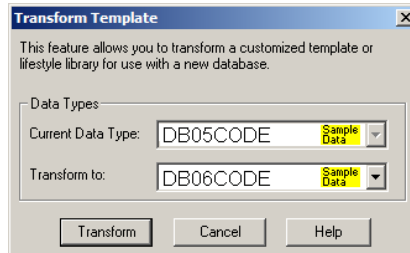
Transform a Data Template to Work with a Different Database

A given data template can only be used with one specific type of database. If you have created a custom template using current year data for the year 2008, you may wish to use it when the 2009 data release becomes available, but your template cannot be attached directly to the new database. Instead, you must use the **Transform Template** feature. Before you begin, ensure that the new database has been installed and registered.

- Create a project using your custom template.
- In the **Template** tab, select **Transform Template**.



- Select the new database type with the **Transform to** selector.



 The Database Type codes will contain sufficient recognizable text to identify the correct type.

- Click .

As a rule, templates can only be transformed between database types from the same vendor, as the data content and codes used to represent specific variables must be the same. Only variables represented by identical codes in both databases can be transformed. For example, if current year population is represented by **POP_CY** in both databases, it can be transformed. If it is **POP_05** in one database and **POP_06** in the other, the transformation will fail for this variable.

PCensus User's Guide

PCensus will provide an estimate of the percentage of variables that can be successfully transformed.

Note that the transformation process will not change any text descriptions in the database. The words “2005 estimated population” would need to be edited manually to read “2006 estimated population” in the transformed template.

33 Understanding the Target Browser

Objective


This section describes some advanced features of the **Target List** browser.

Prior Steps Required

In order to follow the operations described here, you must create a target list as described in the section **Create a Target List** starting on page 85. The examples below use the **Claritas Sample Data**.

Viewing Rejected Targets

By default, target records rejected by the lifestyle filters are not displayed in the **Lifestyle Target** list.

➤ Click the  button in the tool bar to make the rejected targets visible.

Rank	Whatcom County, WA ZIP code List		Percentage owner occupied housing units	Expenditure per household on gardening services	Total owner occupied housing units	Estimated Median Household Income
rejected	98229	Bellingham	67.59	175	6,951	\$ 49,272
rejected	98230	Blaine	70.32	170	3,095	\$ 49,750
1	98264	Lynden	70.32	168	4,027	\$ 53,395
rejected	98226	Bellingham	71.56	163	8,297	\$ 49,450
2	98262	Lummi Island	78.61	162	305	\$ 51,995
3	98248	Ferndale	75.11	160	4,964	\$ 51,764
4	98240	Custer	81.35	155	820	\$ 58,961
rejected	98244	Deming	79.93	149	697	\$ 49,725
5	98247	Everson	73.80	146	1,958	\$ 50,203
rejected	98266	Maple Falls	77.78	142	672	\$ 40,331
rejected	98225	Bellingham	42.02	141	7,509	\$ 32,809
6	00072	National Forest/Park	8.35	135	2	\$ 90,000
7	98220	Acme	76.80	133	139	\$ 52,778
rejected	98295	Sumas	66.10	131	503	\$ 45,728
Accepted	7 Targets		73.63	160	12,215	\$ 52,549
Rejected	8 Targets		59.59	157	28,161	\$ 43,325
Total	15 Targets		63.24	158	40,376	\$ 45,666


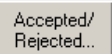
➤ Click  again to hide them.

 Note that the rejected records do not affect the values in the **Cumulative** column.

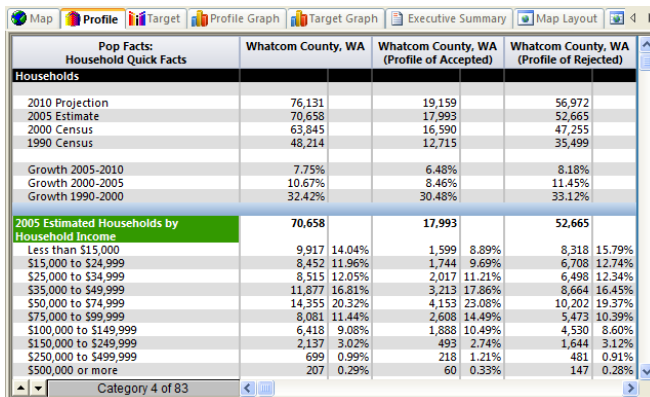
Interpreting the Target List

When a target list is created and one or more records are rejected by filters, three new columns are created in the **Profile** browser:

- A column for the **total of all targets** in the study area.
- A column for the total of all records that passed the filters (**Accepted**).
- A column for the total of all records that were **Rejected** (not passed by the filters).


 The **Accepted** and **Rejected** columns can be turned off by clicking the  button in the **Edit Lifestyle** dialog box (page 89).

Select the **Profile** tab to view these columns.



Pop Facts:	Whatcom County, WA	Whatcom County, WA (Profile of Accepted)	Whatcom County, WA (Profile of Rejected)
Household Quick Facts			
Households			
2010 Projection	76,131	19,159	56,972
2005 Estimate	70,658	17,993	52,665
2000 Census	63,845	16,590	47,255
1990 Census	48,214	12,715	35,499
Growth 2005-2010	7.75%	6.48%	8.18%
Growth 2000-2005	10.67%	8.46%	11.45%
Growth 1990-2000	32.42%	30.48%	33.12%
2005 Estimated Households by Household Income	70,658	17,993	52,665
Less than \$15,000	9,917 14.04%	1,599 8.89%	8,318 15.79%
\$15,000 to \$24,999	8,452 11.96%	1,744 9.69%	6,708 12.74%
\$25,000 to \$34,999	8,515 12.05%	2,017 11.21%	6,498 12.34%
\$35,000 to \$49,999	11,877 16.81%	3,213 17.86%	8,664 16.45%
\$50,000 to \$74,999	14,355 20.32%	4,153 23.08%	10,202 19.37%
\$75,000 to \$99,999	8,081 11.44%	2,608 14.49%	5,473 10.39%
\$100,000 to \$149,999	6,418 9.08%	1,888 10.49%	4,530 8.60%
\$150,000 to \$249,999	2,137 3.02%	493 2.74%	1,644 3.12%
\$250,000 to \$499,999	699 0.99%	218 1.21%	481 0.91%
\$500,000 or more	207 0.29%	60 0.33%	147 0.28%

We can examine the differences between the **Accepted** and **Rejected** populations to gain insight into the reasons that these populations are different. This analysis may in turn enable us to design new Lifestyles that we can use to find similar favorable targets.

 The indexing feature (page 144) can help us identify the variables that correlate to the accepted and rejected populations. When this procedure is used in conjunction with databases to which you have attached your own data (page 191), it provides a flexible method for **Penetration Analysis** (page 245).

Zooming to a Target Record

Sometimes we may want to get more information about a specific target in the Target List; for example it may have anomalous values in one or more dimensions that we want to explain.

➤ Highlight a target in the list (for example, the ZIP code **98226 Bellingham**).



➤ Click the **View Target Profile** button

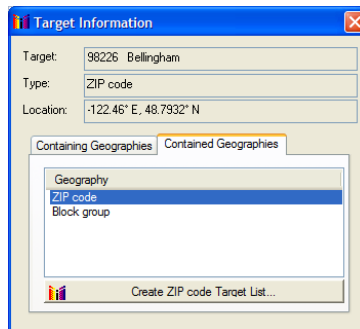
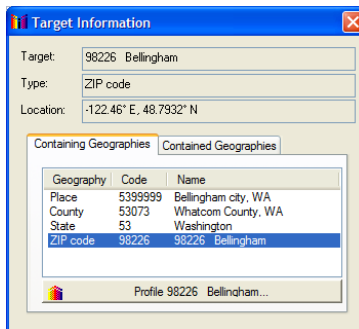
? As a shortcut, you can just double-click a target. You can view profiles for any target, even if has been rejected by the filters.

Pop Facts: Household Quick Facts	Whatcom County, WA	Whatcom County, WA (Profile of Accepted)	Whatcom County, WA (Profile of Rejected)	98226 Bellingham
Households				
2010 Projection	76,131	19,159	56,972	15,248
2005 Estimate	70,658	17,993	52,665	13,631
2000 Census	63,845	16,590	47,255	11,594
1990 Census	48,214	12,715	35,499	7,512
Growth 2005-2010	7.75%	6.48%	8.18%	11.86%
Growth 2000-2005	10.67%	8.46%	11.45%	17.57%
Growth 1990-2000	32.42%	30.48%	33.12%	54.34%
2005 Estimated Households by Household Income	70,658	17,993	52,665	13,631
Less than \$15,000	9,917 14.04%	1,599 8.89%	8,318 15.79%	1,316 9.65%
\$15,000 to \$24,999	8,452 11.96%	1,744 9.69%	6,708 12.74%	1,544 11.33%
\$25,000 to \$34,999	8,515 12.05%	2,017 11.21%	6,498 12.34%	1,629 11.95%
\$35,000 to \$49,999	11,877 16.81%	3,213 17.86%	8,664 16.45%	2,415 17.72%
\$50,000 to \$74,999	14,355 20.32%	4,153 23.08%	10,202 19.37%	3,083 22.62%
\$75,000 to \$99,999	8,081 11.44%	2,608 14.49%	5,473 10.39%	1,621 11.89%
\$100,000 to \$149,999	6,418 9.08%	1,888 10.49%	4,530 8.60%	1,457 10.69%

A new column has been created in the profile browser for the selected ZIP target area.

Target Properties

Right-clicking an area in the target list allows you to display the **Target Information** dialog.



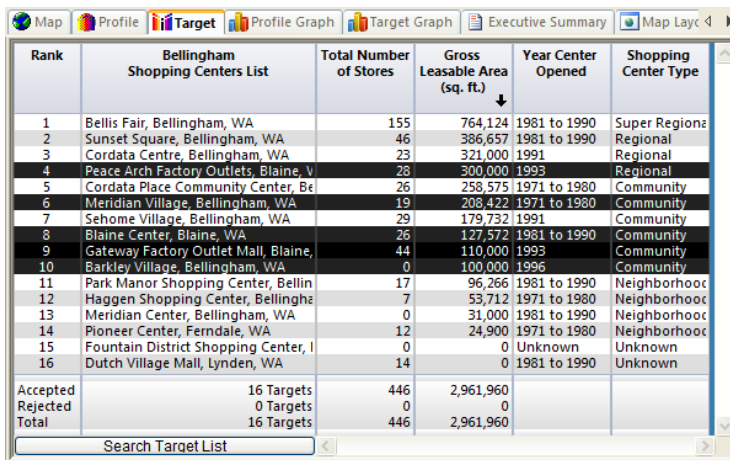
PCensus User's Guide

The **Contained Geographies** tab shows the component target geographies into which the selected target can be divided. For example, a ZIP Code area contains block group targets. The **Create ... Target List** button creates a target list at the selected level, using Whatcom County as the study area. This operation is called “drilling down”.

The **Containing Geographies** tab lists the larger geographies of which the selected target is part; for example ZIP code 98226 is located in the Bellingham MSA , Whatcom County and in the State of Washington. The **Profile ...** button creates a profile column for the selected geography. This operation is called “drilling up”.

Create Batch Sites for Selected Targets

Right-clicking in the target list allows you to create batch sites (page 223) for selected targets. This can be done with any target type, but it is most likely to be used with “point” type data such as shopping centers or imported point data (page 181).



Rank	Bellingham Shopping Centers List	Total Number of Stores	Gross Leasable Area (sq. ft.)	Year Center Opened	Shopping Center Type
1	Bellis Fair, Bellingham, WA	155	764,124	1981 to 1990	Super Region
2	Sunset Square, Bellingham, WA	46	386,657	1981 to 1990	Regional
3	Cordata Centre, Bellingham, WA	23	321,000	1991	Regional
4	Peace Arch Factory Outlets, Blaine, WA	28	300,000	1993	Regional
5	Cordata Place Community Center, Bellingham, WA	26	258,575	1971 to 1980	Community
6	Meridian Village, Bellingham, WA	19	208,422	1971 to 1980	Community
7	Sehome Village, Bellingham, WA	29	179,732	1991	Community
8	Blaine Center, Blaine, WA	26	127,572	1981 to 1990	Community
9	Gateway Factory Outlet Mall, Blaine, WA	44	110,000	1993	Community
10	Barkley Village, Bellingham, WA	0	100,000	1996	Community
11	Park Manor Shopping Center, Bellingham, WA	17	96,266	1981 to 1990	Neighborhood
12	Haggen Shopping Center, Bellingham, WA	7	53,712	1971 to 1980	Neighborhood
13	Meridian Center, Bellingham, WA	0	31,000	1981 to 1990	Neighborhood
14	Pioneer Center, Ferndale, WA	12	24,900	1971 to 1980	Neighborhood
15	Fountain District Shopping Center, Lynden, WA	0	0	Unknown	Unknown
16	Dutch Village Mall, Lynden, WA	14	0	1981 to 1990	Unknown
Accepted	16 Targets	446	2,961,960		
Rejected	0 Targets	0	0		
Total	16 Targets	446	2,961,960		

Select the targets to be used as batch locations (to make multiple selections you can drag the mouse or use Shift-click or Ctrl-click combinations). Right-click in the selection to start the Batch site Wizard. You can optionally create a new project; this allows you to select a different database (for example to retrieve demographic data for each shopping center).

Understanding the Target Browser

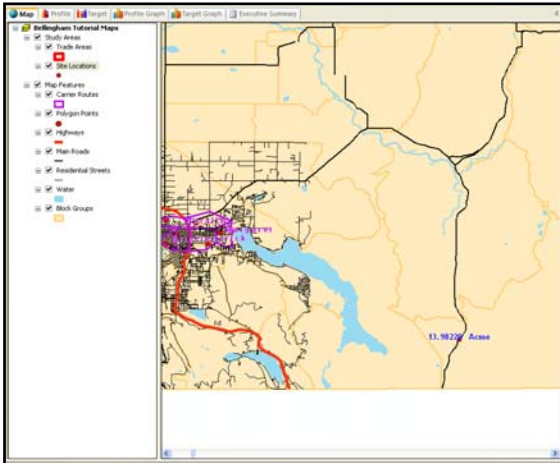
Pop Facts: Demographic Quick Facts	Peace Arch Factory Outlets, Blaine, WA 0 - 5 mi	Meridian Village, Bellingham, WA 0 - 5 mi	Blaine Center, Blaine, WA 0 - 5 mi	Gateway Factory Mall, Blaine, WA 0 - 5 mi			
Population							
2010 Projection	13,734	95,389	12,282	13,809			
2005 Estimate	12,798	88,777	11,296	12,867			
2000 Census	11,742	80,681	9,939	11,804			
1990 Census	8,629	64,075	6,561	8,671			
Growth 1990 - 2000	36.08%	25.92%	51.02%	36.14%			
Households							
2010 Projection	5,149	39,454	4,865	5,171			
2005 Estimate	4,798	36,497	4,491	4,819			
2000 Census	4,397	32,889	3,963	4,416			
1990 Census	3,136	25,538	2,662	3,150			
Growth 1990 - 2000	40.20%	28.78%	48.90%	40.17%			
2005 Estimated Population by Single Race Classification	12,798	88,777	11,296	12,867			
White Alone	11,644	90.98%	77,043	86.78%	10,140	89.76%	11,700
Black or African American Alone	122	0.96%	960	1.08%	146	1.29%	124
Category 2 of 83							

Locating a Target on the Map

Sometimes we may want to see where a specific target is located.

➤ Highlight the ZIP code target **98220 Acme**.

➤ Click the **View Target on Map** button .

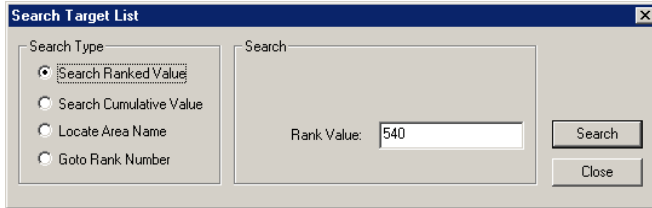


The Map zooms to the location of the target and marks it with a symbol and a label.

Searching the Target List

The Target List browser provides a Search tool that allows you to jump to a specific target.

- Select the **Target List** tab.
- Click the  button at the base of the window.




This dialog box provides a number of methods for jumping to a specific record in a long list of targets. Select the method by clicking the buttons in the **Search Type** panel.


- **Search Ranked Value:** Jump to the first target where the value of the ranking dimension is greater (or less if rank is descending) than a specified number.

 For example, the first block group with average income greater than \$40,000.


- **Search Cumulative Value:** Jump to the first target where the cumulative value of a dimension evaluates to a number greater (or less) than a specified number.

 This is a quick way to identify a group of favorable targets that together contain a specified population; for example the block groups in a study area that contains the wealthiest 5,000 families.

- **Locate Area Name:** Jump to the first target who's **Area Name** matches the typed text.

 This feature allows you to check whether a specific area passed the defined filters; for example, is **Cowlitz County** in the target list?

- **Go to Rank Number:** Jump to the target at a specified position in the list.

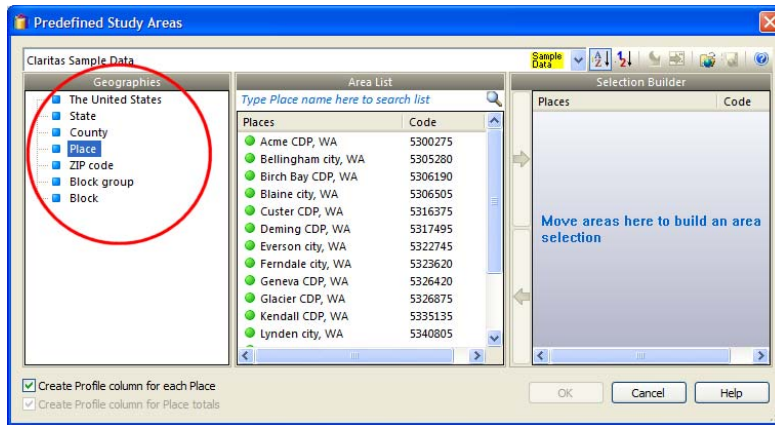
 For example, find the 10th wealthiest block group.

34 Create Custom Geographies

Background

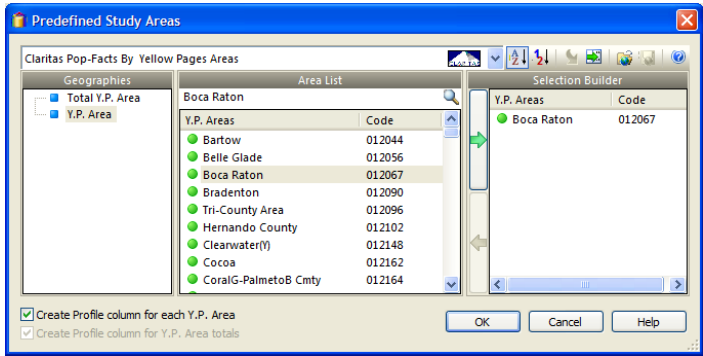
Each PCensus database contains a number of predefined geographical summary levels such as State, county, place, ZIP code or block. The summary levels present in a database define the “Target Types” that can be used for creating target lists (Chapter 20), point files (Chapter 27) or for matching with mapped boundaries to create thematic maps (Chapter 16).

The target types available in a given database are listed in the **Geographies** panel of the Database Explorer or the Predefined Study Area dialog:



A fundamental feature of PCensus is its ability to re-aggregate data from a collection of target records whose centroids are located within an area defined by a polygonal boundary in a map layer (see Chapter 12). The Custom Geography Wizard extends this capability by automatically re-aggregating data against each of the boundaries contained in a map layer and using the resulting aggregations to create a new PCensus database containing a target type representing the boundaries.

The Custom Geography Wizard can be used with any type of mapped boundary. Common uses include school districts, franchise areas, postal carrier routes or “Yellow Pages” coverage areas. Once a new geography has been created, it will appear in the Predefined Study Area dialog and the Area List will contain an entry for each boundary.



We can use the custom areas in exactly the same way that we would use the standard target types like counties or ZIP codes, without further reference to a map layer.

Custom Geographies and Thematic Mapping

The introduction of the PCensus Custom Geography feature has important implications in creating thematic boundary maps using boundary types that do not correspond to standard geographical areas.

PCensus provides two methods for assigning data to boundaries to create thematic maps:

- Relating data targets to boundaries by “code matching”. This requires a one-to-one correspondence between boundary objects in the map layer and target records in the PCensus database. This is the preferred method for thematic mapping, as it provides an unambiguous data linkage, and avoids the requirement to re-aggregate non-additive data values such as averages and medians.
- Assigning data targets to boundaries by point-in polygon matching. This method can be used when map boundaries do not correspond to a target type in the PCensus database. Typically, PCensus would calculate thematic values by aggregating multiple block-level targets contained in each map boundary. Use of this method is discouraged, as there is often no reliable method for re-aggregating non-additive data.

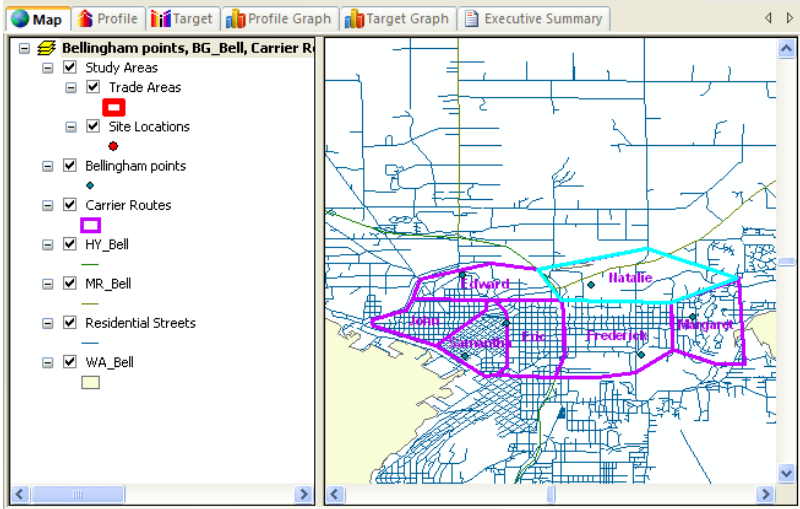
The Custom Geography feature is guaranteed to create a database containing target records that correspond exactly to the mapped boundaries. By creating a custom geography prior to thematic mapping, we can always use the preferred code-matching method to assign the database point objects to the mapped boundaries.

For more discussion of this topic, see Chapter 15, Thematic Mapping with Boundaries.

Steps to Create a Custom Geography

To illustrate this process, we will use the very simple example of the newspaper carrier areas included with the Bellingham Tutorial Maps.

- Start a new PCensus Project, selecting the **Bellingham Tutorial Maps** in the PCensus task pane.

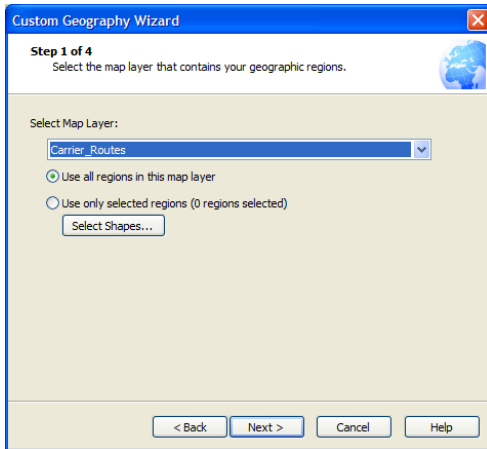


? *In this case, there are seven boundaries in the map layer, but in practice, the technique can be used with any number of boundaries.*

In order to use a map layer, it must have the following attributes:

- Each record must have a data field containing a unique identifying code.
- Ideally, each record will have an identifying name field, preferably unique.

PCensus User's Guide



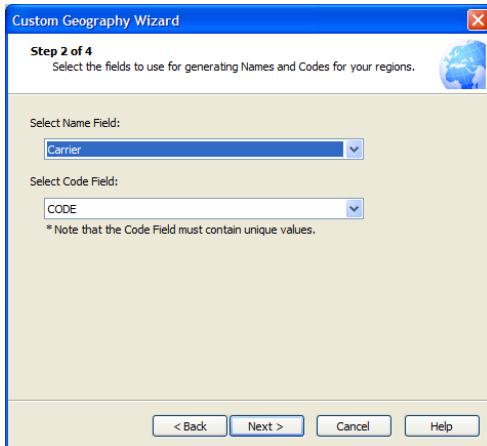
Step 1 of 4
Select the map layer that contains your geographic regions.

Select Map Layer:
Carrier_Routes

Use all regions in this map layer
 Use only selected regions (0 regions selected)
Select Shapes...

< Back Next > Cancel Help

- Select **Custom Geography Wizard** from the PCensus **Tools** menu and advance to the **Step 1** wizard page.
- Select the **Carrier Routes** Map Layer.
- Click **Next**.



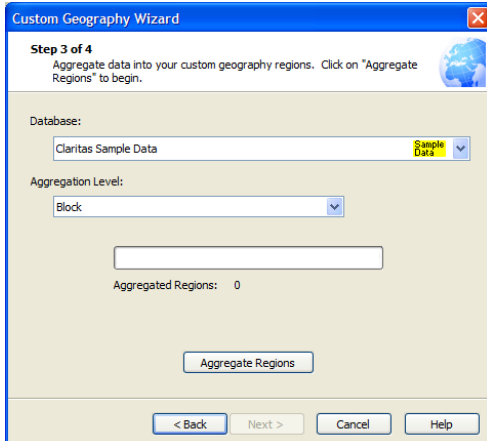
Step 2 of 4
Select the fields to use for generating Names and Codes for your regions.

Select Name Field:
Carrier

Select Code Field:
CODE
* Note that the Code Field must contain unique values.

< Back Next > Cancel Help

- Select **Carrier** as the **Name** field.
- Select **Code** as the **Code** field.
- Click **Next**.



Step 3 of 4
Aggregate data into your custom geography regions. Click on "Aggregate Regions" to begin.

Database:
Claritas Sample Data Sample Data

Aggregation Level:
Block

Aggregated Regions: 0

Aggregate Regions

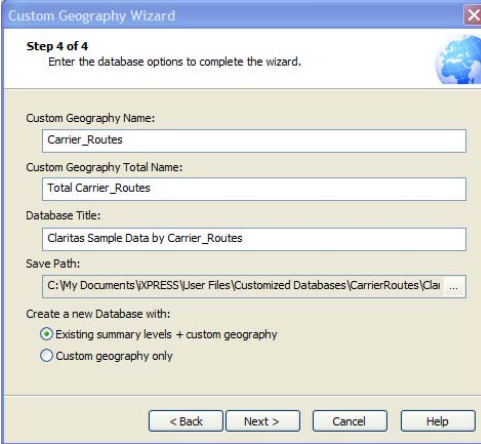
< Back Next > Cancel Help

- Select the **Claritas Sample Data** database.
- Select **Block** as the **Aggregation Level**.
- Click **Aggregate Regions** to begin the processing.

Create Custom Geographies


The **Aggregation Level** defines the type of targets that will be aggregated into each boundary. For very small boundaries (for example postal walks), block level will give the best results. However, for larger types such as Yellow Pages boundaries, it may be preferable to use larger targets, such as census tracts, Zip codes, MCDs or even counties, as the precision provided by blocks may not be warranted. The use of larger targets can make a very significant difference in the time required to aggregate the data.

 For maps with many boundaries, the Custom Geography process may take several hours.



- Edit the identifying information for the database.
- Click **Next**.

- **Custom Geography Name** is the name used for the new aggregation level. It will appear in the **Predefined Study Area** dialog and in **Database Explorer**.
- **Custom Geography Total Name** is an additional aggregation level that contains the total of all boundaries.

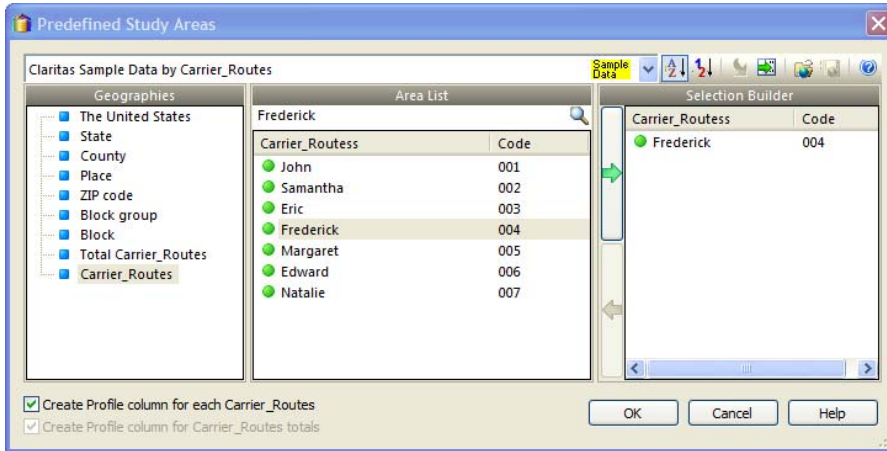
 *Note: If boundaries overlap, the values retrieved for the **Total** level will be larger than expected due to multiple counting.*

- **Database Title** will appear in the list of installed databases.

Using the Custom Geography

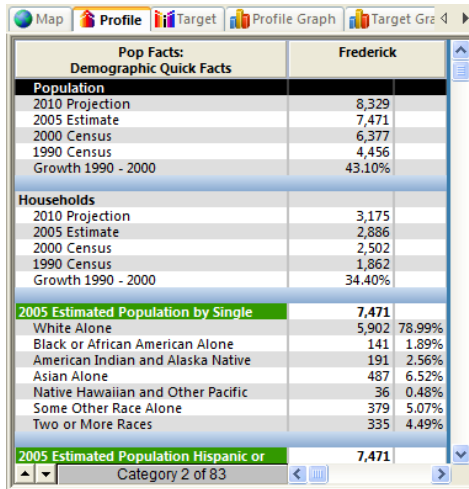
To use the custom geography in a project:

- Set up a new project, selecting the newly created **Claritas Sample Data by Carrier_Routes** database.
- Open the Predefined Study Area dialog.



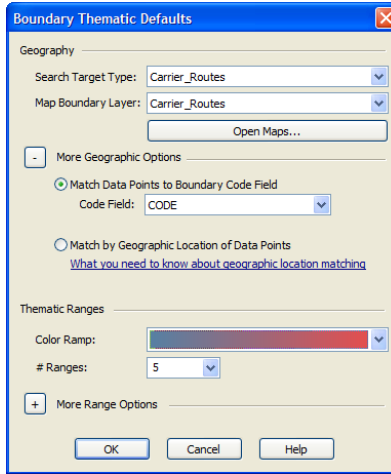
Note the two new entries in the Geographies column, **Total Carrier Routes** and **Carrier_Routes**. When you select the latter entry, the names of the areas appear in the **Area List** column.


- Create a profile column for **Frederick**.

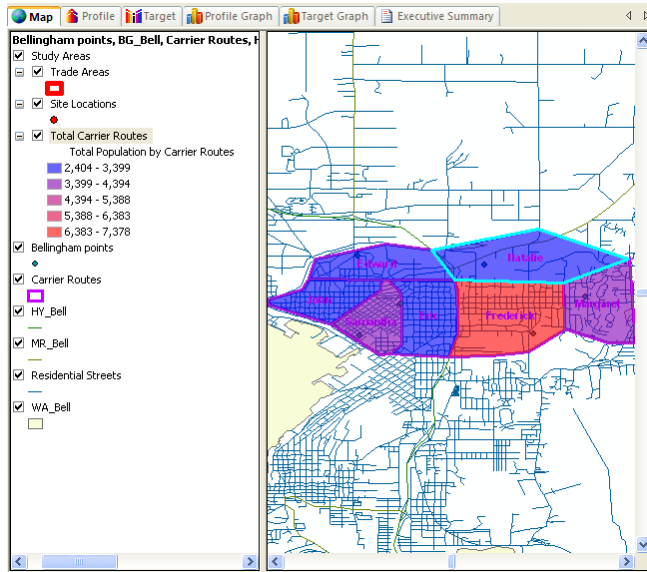


As a further example, we will use the custom geography to create a thematic map.

- Click  **Defaults:** in the **Boundary Thematics** Task pane.



- Set the **Search Target Type** to **Carrier_Routes** to select our custom geography.
- Set the **Map Boundary Layer** to **Carrier_Routes** to select the corresponding map layer.
- Select the option to **Match Data Points to Boundary Code Field**.
- Click OK to close the dialog.
- Click  **Create thematic for current map view.**




35 Using Your Own Data in PCensus

Background

PCensus provides three methods for importing user-supplied data:

- Geocoded Point Data (data records representing individual locations specified by latitude/longitude coordinates or by street address) can be imported to create a “point” database, preserving data for the individual records.
- Geocoded Point Data can be imported to create a labeled map layer.
- Data records characterized by standard codes that match those in a PCensus database (for example ZIP codes or block group FIPS codes) can be appended to the corresponding PCensus records to create an “extended” database.

The preferred method will depend on the content of the imported data and the purpose for which it will be used. If necessary, the methods can be combined to exploit the strengths of each method simultaneously. For example, we can attach point data to a PCensus database as a new “point” target type and simultaneously append summarized data to each target record in the PCensus data.

 *It is recommended that the “point data” and “append data” methods be combined whenever the imported data is suitable (i.e. it contains both coordinate data and a “key” field such as block group or ZIP code). Combining the methods allows us to access individual records and also to summarize to higher geographical levels such as county or state.*

Import records as Point Data

Organizations often maintain and use databases containing location-based data (i.e. records representing geographical locations characterized by latitude/longitude coordinates or by street addresses).

If the imported database does not contain coordinates, PCensus can geocode the locations based on street addresses in the file. Alternatively, there are many programs and services available for geocoding.

A geocoded database can be imported directly into PCensus and data can be retrieved from the resulting database for geographical study areas (circles, drive times, or polygons) or for target lists.

Every record in the imported database will be visible in a target list, identified by name, in contrast to databases created by extending a standard PCensus

PCensus User's Guide

database (page 191). The latter method “rolls up” (summarizes) the individual data records into areas defined in the PCensus database.

A limitation on PCensus databases created by importing geocoded data is that such data lacks the implicit geographical hierarchy of standard PCensus databases. In other words, data cannot be retrieved for predefined areas like places or counties. This limitation can be avoided by combining the “point data” and “append data” import methods.

Extend an Installed PCensus Database

The PCensus **Data Import** feature lets you append your own data to an existing PCensus database. After you have imported your data, you will be able to create profiles, targets, maps, and graphs using your data, either on its own or in conjunction with PCensus demographic data.

A typical use for this feature would be in customer penetration studies (page 245). In this usage, you can attach your customer file to a PCensus database, and then create a target report comparing your customer counts to the population at large. You can quickly analyze the demographic profiles of the areas where your best (or worst) customers live and then use PCensus targeting to find similar areas.

The import process matches standard codes in your data to corresponding codes in a PCensus database. For example, if the data that you want to import contains addresses, you could match the ZIP code for each record with the corresponding PCensus ZIP code.

Mapping Point Data

PCensus provides the capability to read data from standard database formats (xls, dbf, mdb, etc.) and display labeled symbols on a map. Each symbol represents a point defined in the database.

If the database contains latitude/longitude coordinates, the map points can be created directly. Failing this, records can be geocoded on the basis of address.

Types of Imported Data

Data can be imported into PCensus from files in Excel, dBase or Access format. In a typical database, each record will represent a single geographical

location, represented by latitude/longitude coordinates or by street address. Typical examples are:

- Address lists of clients or contacts.
- Lists of business locations (bank branches, physicians' offices, etc.).
- Geographically indexed demographic data, such as Census data, for Canada, the United States or other countries.

We will illustrate this chapter and the chapters that follow with a typical file (in xls format) containing records representing bank branches in Whatcom county, WA. The file is installed with PCensus in this folder:

C:\Program files\PCensus\Tutorial Files

	A	B	C	D	E	F	G	H	I	J	K	L
	Bank Name	City	ZIP Code	State	Block Group	Year Established	Years In Business	Bank Type	Office Type	Total Deposit	Latitude	Longitude
1	Bank Name	City	ZIP Code	State	Block Group	Year Established	Years In Business	Bank Type	Office Type	Total Deposit	Latitude	Longitude
2	Washington Fede	Bellingham	98226	WA	530730009001	1933	72	Savings & Lc	Branch Office	29208	48.744763	-122.461012
3	Bank of America	Bellingham	98225	WA	530730006001	1939	66	Commercial	Branch Office	60794	48.749468	-122.478827
4	Bank of America	Sumas	98295	WA	530730102002	1967	38	Commercial	Branch Office	21513	48.992821	-122.264768
5	Bank of America	Bellingham	98226	WA	530730002001	1991	14	Commercial	Branch Office	45107	48.793291	-122.486107
6	Bank of America	Blaine	98230	WA	530730104011	1954	51	Commercial	Branch Office	64365	48.994863	-122.750316
7	Bank of America	Lynden	98264	WA	530730103022	1951	54	Commercial	Branch Office	41081	48.941409	-122.458836
8	Bank of America	Bellingham	98225	WA	530730012001	1993	12	Commercial	Branch Office	12070	48.732912	-122.469619
9	Bank of America	Bellingham	98226	WA	530730001003	1994	11	Commercial	Branch Office	11400	48.773086	-122.458384
10	Wells Fargo	Ferndale	98248	WA	530730105024	1956	49	Commercial	Branch Office	15238	48.847147	-122.594556
11	Wells Fargo	Lynden	98264	WA	530730103013	1987	18	Commercial	Branch Office	15119	48.939537	-122.479242
12	Wells Fargo	Bellingham	98226	WA	530730008013	1998	7	Commercial	Branch Office	21631	48.77135	-122.445107
13	Peoples Bank	Lynden	98264	WA	530730103022	1921	84	Commercial	Home Office	134641	48.944342	-122.453016

The data fields (columns) in this file can be classified as follows:

Classification	Type	Name
Identification Fields	Text	Bank Name City ZIP code State
Location Fields	Numeric	Latitude Longitude
Key Fields (Suitable for linking to records in a PCensus database)	Text	ZIP Code Block Group
Data Fields	Numeric Data	Total Deposit
	Numeric Data (non-additive)	Years in Business
	Text Data or Unique Value Data	Bank Type Office Type Year Established

PCensus User's Guide

PCensus can import these types of data fields:

- **Numeric Data** is data that can be meaningfully aggregated between records; we can add the total amounts on deposit for all the banks in a study area to calculate a useful number.
- **Non-additive Numeric Data** cannot be meaningfully aggregated across records. Calculating the sum of “years in business” for all the banks in an area would not generally be useful. However, we can calculate the “average years in business” using this entry.
- **Text Data** such as names, addresses or similar attributes.
- **Unique Value Data** specifies an attribute for each data record, usually as a word or phrase. “Bank type” may contain “Commercial”, “Savings & Loan” or other values. PCensus examines the data to find all possible variants of the contents, and creates a numeric data field for each one. The content of each field is incremented every time the corresponding text is encountered in the import data. This allows the text to be displayed in profile reports using the “dominant group” data type.
- **Segment Codes** such as PRIZM codes. (See chapter 45, Using Segmentation Data for Customer Analysis.)

Data Import Examples

The chapters that follow provide step-by-step examples of the techniques for importing data:

- Chapter 36, Importing Point Data.
- Chapter 37, Appending Your Data to a PCensus Database.
- Chapter 38, Importing Data to Create a Point Map.

Each of these examples makes use of a sample database of bank branch locations in Whatcom County, WA. Although the processes are treated separately in these chapters, they can be combined as required, for example, to create a database containing both point level and summarized data in a single step.

36 Importing Point Data

Objective

Import point data into PCensus for retrieval by drive time, circle or polygon study areas, and for creating target lists. The resulting database will contain records for each point, without reference to an installed PCensus database.

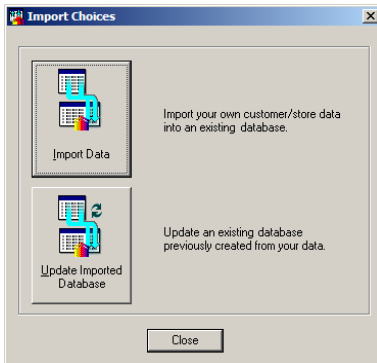
Prior Steps Required

Create or obtain a database in a format supported by PCensus (Excel, dBase, or Access), preferably containing records geocoded with Latitude and Longitude coordinates. An example file has been provided for demonstration purposes. This file contains data for bank branch locations in Whatcom county, WA.

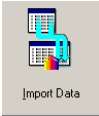
To understand the concepts described in this chapter, you should first read these chapters:

- Profiling Drive Time Areas (page 37)
- Create a Target List (page 85).

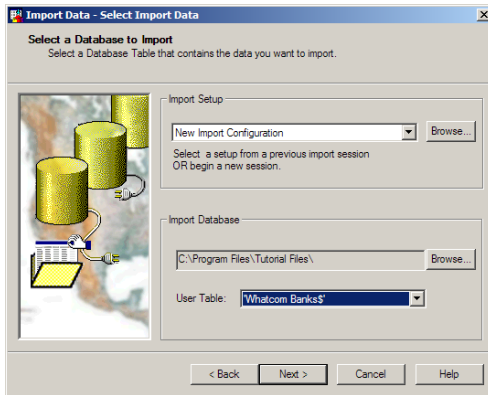
Steps in Creating a PCensus Database




➤ Click the **Import** icon  in the PCensus tool-bar to display the **Import Choices** dialog box, or select **Import Wizards** from the **Tools** menu.

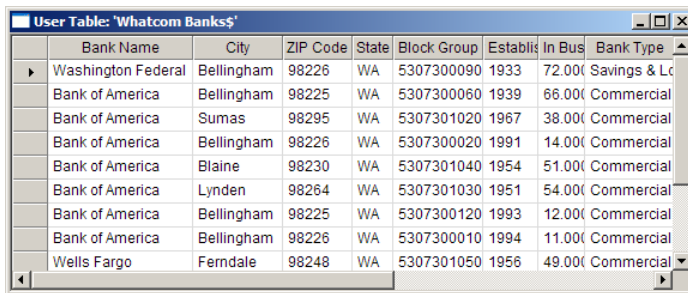
- Click  to start the **Create Database Wizard**.
- Advance to the **Select Import data Wizard** page.

Select the Data to Import



- Click the  **Browse...** button in the **Import Database** panel.
- **Select Files of Type: Excel (*.xls).**
- Open **Whatcom Banks.xls** in the **Program Files\PCensus\Tutorial Files** folder.

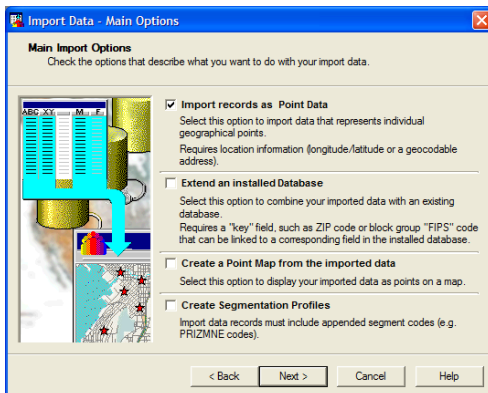
 The **Import Setup** panel lets us re-use similar import configurations from previous sessions. It is not used the first time we import data.




	Bank Name	City	ZIP Code	State	Block Group	Establis	In Bus	Bank Type
▶	Washington Federal	Bellingham	98226	WA	5307300090	1933	72.00	Savings & Lc
	Bank of America	Bellingham	98225	WA	5307300060	1939	66.00	Commercial
	Bank of America	Sumas	98295	WA	5307301020	1967	38.00	Commercial
	Bank of America	Bellingham	98226	WA	5307300020	1991	14.00	Commercial
	Bank of America	Blaine	98230	WA	5307301040	1954	51.00	Commercial
	Bank of America	Lynden	98264	WA	5307301030	1951	54.00	Commercial
	Bank of America	Bellingham	98225	WA	5307300120	1993	12.00	Commercial
	Bank of America	Bellingham	98226	WA	5307300010	1994	11.00	Commercial
	Wells Fargo	Ferndale	98248	WA	5307301050	1956	49.00	Commercial

The contents of the file are displayed in a new window for verification.

- Click .

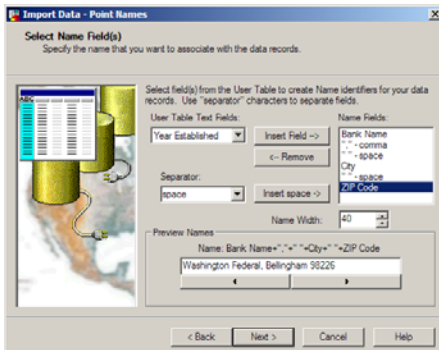


- Check **Import records as Point Data**.
- Click .

Identify the Area Names

The next dialog box allows you to specify the name that will be used to represent each record in PCensus.

? In this case the “**Bank Name**” field will be sufficient, but if necessary we can build complex names of the form <city><comma><space><state>.



- Select **Bank Name** in the **User Table Text Fields** list and click **Insert Field -->** to transfer it to the **Name Fields** box.
- Add any other fields or punctuation required to specify unique names as shown.
- Click **Next >** to advance to the **Geocode Method** dialog.



- Select **Use Geographic Coordinates from fields in table**.
- Click **Next >**.

Geocoding

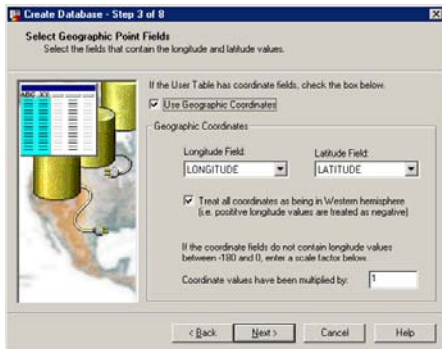
If your data file is not geocoded (i.e. it does not contain latitude and longitude coordinates for each record), it may still be possible to create a PCensus database. PCensus can geocode databases internally, provided that the data records contain street addresses.

To use the internal geocoder, select **Geocode based on address** and follow the steps to identify the necessary address fields and map layers.

The success of the geocoding process depends on several factors. For example, the consistency with which the street addresses are specified in the database and the quality of the street network table used can both affect results.

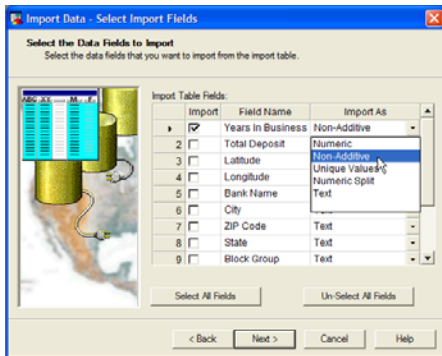
? The geocoder works interactively, allowing you to resolve ambiguities and spelling errors in the addresses, but for large or problematic databases it is recommended that a dedicated geocoding service or software application be used to geocode the file before importing it into PCensus.

Identify the Geographic Coordinates



- Verify that the latitude and longitude fields are correctly assigned.
- Click **Next >**.

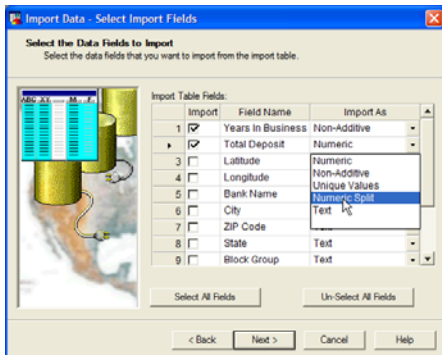
Identify the Variables in the Imported Data



This dialog allows us to select the variable we wish to import, and to specify how each variable will be treated.

- Check the box for **Years in Business**.
- Select **Non-Additive** from the **Import As** pull-down list.

② ***Years in Business** is a numeric field, but it would not be appropriate to aggregate it for all banks in a study area. The **Non-Additive** attribute will cause this value to be averaged instead of aggregated.*



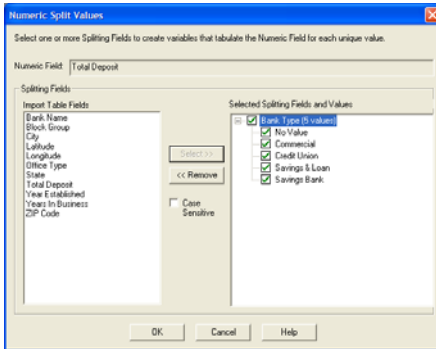
- Check the box for **Total Deposit**.

② *We will treat this as a **Numeric** variable. The deposits for all banks in a study area will be aggregated.*

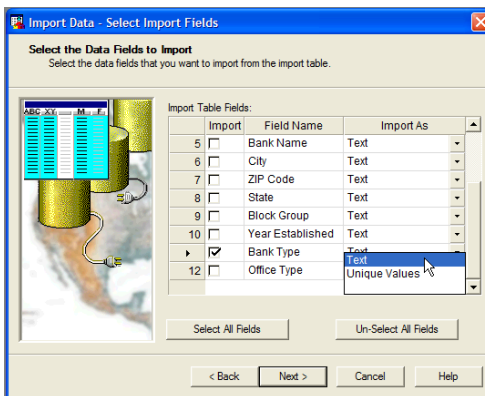
- Select **Numeric Split** from the **Import As** pull-down list

② *This will allow us to tally **Total Deposits** separately for the different **Bank Types**.*

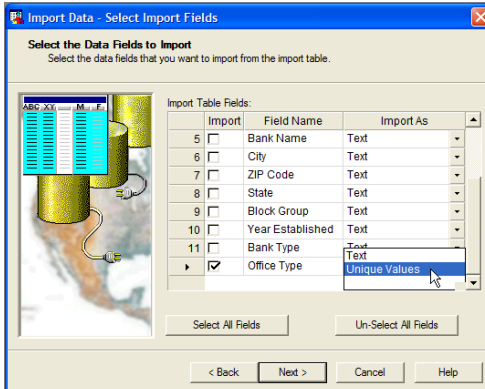
Importing Point Data



- Select **Bank Type** from the **Import Table Fields** and click **Select >>** to move it to the right-hand pane.
- Expand the **Bank Type** list to see the types represented in the imported data.
- Click **OK**



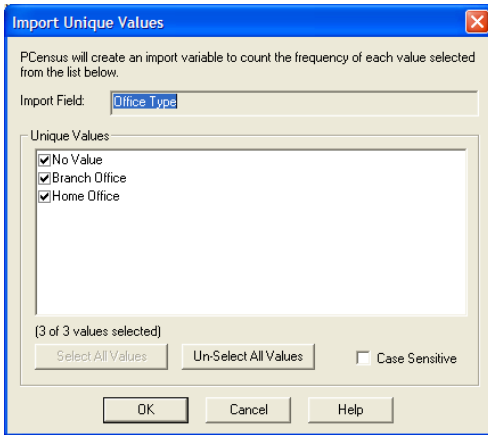
- Check the box for **Bank Type**.
- Select **Text** from the **Import As** pull-down list.



- Check the box for **Office Type**.
- Select **Unique Values** from the **Import As** pull-down list

Note that we have already used this field to define the *numeric split*, above.

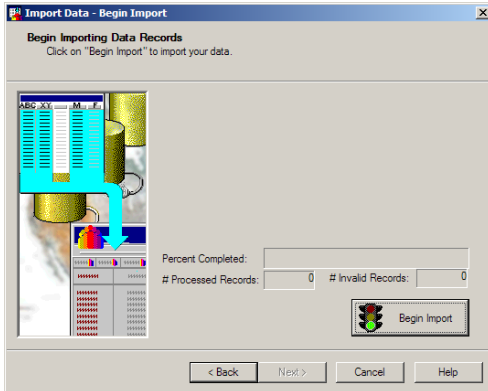
PCensus User's Guide



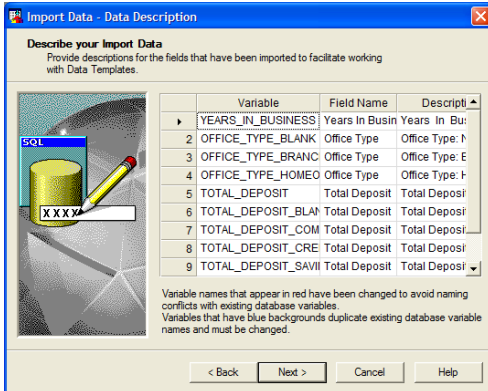
PCensus classifies all the represented values in the specified field. Blank fields will create a class called “No Value”.

- Click **OK**.
- Click **Next**.

Create the Database



- Click **Begin Import** to create the database.
- Click **Next** when finished.



- If necessary, double-click in the **Description** field to edit descriptions for the variables that will appear in PCensus reports.

? *This step is optional. If nothing is entered, the variable names will be used.*

- Click **Next**.

2 Note that for the “unique value” field **Office Type**, separate fields have been generated for each represented value (**OFFICE_TYPE_BRANCHOFFICE**, **OFFICE_TYPE_HOMEOFFICE** etc.) For the “Numeric Split” variable **Total Deposit**, **TOTAL_DEPOSIT_COMMERCIAL** and similar fields were created.

Import Data - Descriptions

Provide Database Names
Specify names for the summary levels in the created database.

Summary Level Label
Enter a description of the areas that are represented by the records in the User Table. (E.g. "Blockgroup" if each record in the User Table pertains to a particular blockgroup.)
Summary Level:

Area Covered
Enter a description for the area that is covered by the User Table. (E.g. "New England" if the User Table covers the New England area.)
Covered Area:

Country

< Back Next > Cancel Help

- Enter a description for the **Summary Level** represented by database records (in this case **Bank Branches**).
- Enter a description for the geographical **Area Covered** by the database (in this case **Whatcom County, WA**).
- Click .

Import Data - Save Options

Name and Save Database
Specify names and file paths for the newly created database files.

Titles
Enter descriptive titles that you want to appear with your database and template.
Database:
Template:

Save As
Save Import Database as:
 ...

< Back Next > Cancel Help

- Enter names by which the new Database (**Whatcom Banks**) and its Template will be identified in PCensus.
- Click .

Import Data Wizard

You have finished with the
Import Data Wizard

The data that you have imported can now be viewed.

Description for Record Count:

< Back Finish Cancel Help

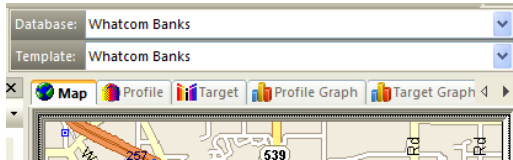
2 The database creation process automatically creates a variable that represents the number of imported records contained in a study area.

- Change the **Description for Record Count** to **Bank Branches**.
- Click .

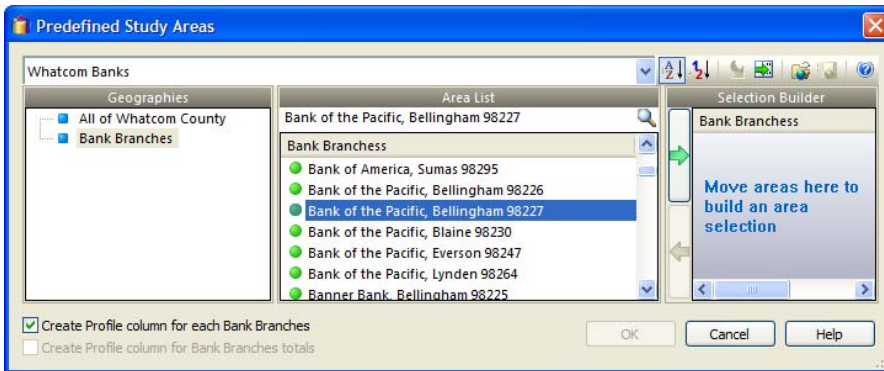
Using the new database

When the import is complete, you can use the new database just like a standard PCensus database:

- Start a new PCensus Project.
- Select the **Whatcom Banks** database.



- Select **Create a Predefined Study Area** in the task pane.



❗ The available **Area Types** are **All of Whatcom County**, which will generate a summary profile for all imported records and **Bank Branches**, which will generate a profile for a specific branch.

- Select one or more **Bank Branches** and click **OK** to generate the profile.

Imported Values	Bank of the Pacific, Bellingham 98227		All of Whatcom County	
		%		%
Bank Branches	1		70	
Years In Business (Average)	8		27	
Dominant Office Type	Branch Office		Branch Office	
Office Type Total	1		70	
No Value	0	0%	2	3%
Branch Office	1	100%	60	86%
Home Office	0	0%	8	11%
Total Deposit by Bank Type				
Total Deposit	57,148		2,847,678	
No Value	0	0%	48,157	2%
Commercial	57,148	100%	1,481,782	52%
Credit Union	0	0%	505,244	18%
Savings & Loan	0	0%	96,683	3%
Savings Bank	0	0%	715,812	25%
Bank Type	Commercial			
Office Type	Branch Office			

- Create an additional profile column for **All of Whatcom County**.

A data template has been automatically created to display the imported variables. You may wish to modify this template for your own purposes.

Note how the different data types are displayed in the profile:

- Non-additive values (Years in Business) are averaged across the study area.
- Unique values (Office Type) are displayed as a “dominant” variable type (page 157), and counts are displayed for the individual classifications.
- Numeric split variables (Total deposit) are summed across the entire study area. Values are summarized for all types (Total Deposit), and for individual bank types (Commercial, Credit Union, etc.).
- Text variable (Bank type) is displayed verbatim.

As a result of this process, the column for an individual bank reproduces the specific information for that bank, whereas a column for an aggregated study area (polygon, circle, etc.) contains a summary for the entire area. Text variables show as blank for study areas containing multiple points.

What Can I Do Now?

- Create a target list using the imported data.
- Use the individual data points as locations for circle or drive time study areas.
- Use this method of importing data in conjunction with the method described in the next section (Appending Your Data to a PCensus Database), which allows you to combine your data with the demographic data supplied with PCensus.
- Create a point map showing the locations of your data points.
- Use the Refresh feature (page 205) to refresh your database or add new data columns.

37 Appending Your Data to a PCensus Database

Objective

Import your own data (facilities, sales, etc.) into PCensus by attaching the data to an installed PCensus database. Use the resulting database to create reports combining your data and PCensus demographics.

Background

If your data records contain U.S. Census Bureau FIPS codes for block groups (BGs), census tracts, etc., you can use these codes to attach your data. Such codes can be attached using commercially available mapping or geocoding software packages. Block group matching allows more detailed analysis of your data than is possible using ZIP codes.

The advantages and disadvantages of the two methods can be summarized as follows:

	Attach by ZIP code	Attach by BG code
Advantage	Most address-based data already contains ZIP codes, so the file can be attached to PCensus without the requirement of geocoding.	The small geographical footprint of most BGs permits more detailed analysis of your data. BG matching allows you to define study areas using all of the target types defined in the PCensus database.
Disadvantage	ZIP codes are relatively large, and may not be homogeneous; assignment of demographics will be less precise. ZIP matching only allows you to define study areas using target types of ZIP code and higher.	Requires adding FIPS codes before data can be attached to PCensus.


PCensus will automatically roll up your imported data to the same levels of geography supported by the installed PCensus database (for example, census tract, place, county, CBSA, or State).

PCensus User's Guide

You can import data into PCensus from many common database formats, including Microsoft Excel, dBase, or Microsoft Access.

When you import data, PCensus creates a new “virtual” database by joining a copy of your data to the installed PCensus database. The new database appears as a registered database, with its own data template, while the original database is left unchanged. You can import as many data files as you want, attaching each one to the same PCensus database. Each one will create a separate virtual database.

The new template contains a category listing your imported data, as well as all the original categories from the installed database. You can use the PCensus template editor to enhance this template, and combine data elements from the imported and installed databases.

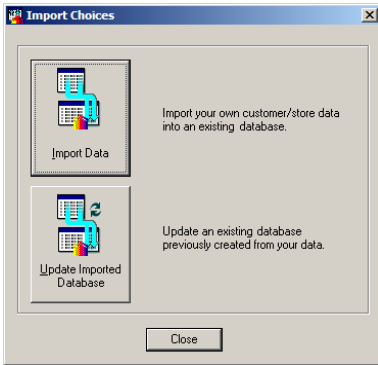
 *PCensus always works with a copy of your imported data, so if you make changes to it in the future, you must repeat the import process or refresh the database with new data (page 205). Otherwise, your changes will not be reflected in the imported data.*


A limitation on PCensus databases created by attaching data to a PCensus database is that the resulting database cannot access data for individual import records – they are all aggregated to higher geographical levels such as ZIP codes or counties. This limitation can be overcome by importing the data as Point data (page 181).

Prior Steps Required


Create or obtain a database in a standard format (Excel, dBase, etc.) containing records geocoded with Census FIPS codes. An example file has been provided for demonstration purposes. This file contains bank branch data for Whatcom County, WA.

Steps in Attaching Data to PCensus by ZIP code

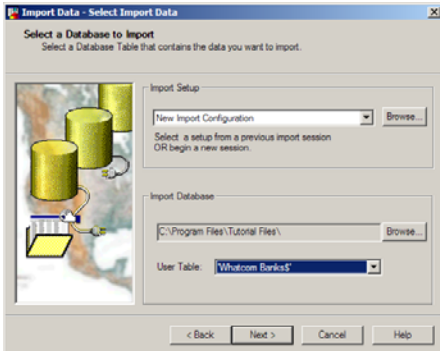



- Click the **Import** icon  to display the **Import Choices** dialog box, or select **Import Wizards** from the **File** menu.




- Click  to start the **Create Database Wizard**.
- Advance to the **Select Import data Wizard** page.

Select the Data to Import




 *The **Import Setup** panel lets you re-use similar import configurations from previous sessions; it is not used the first time we import data.*

- Click the  button in the **Import Database** panel.
- Open **Whatcom Banks.xls** in the **Program Files\PCensus\Tutorial Files** folder.

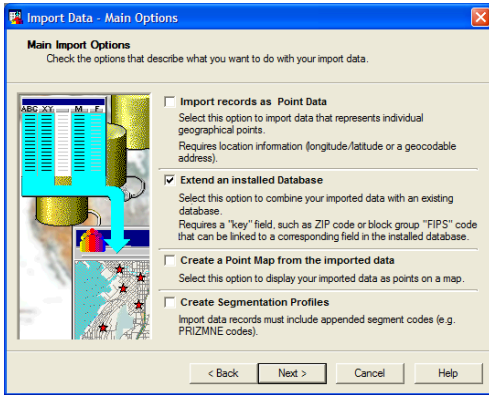
User Table: 'Whatcom Banks\$'								
	Bank Name	City	ZIP Code	State	Block Group	Establis	In Bus	Bank Type
▶	Washington Federal	Bellingham	98226	WA	5307300090	1933	72.00(Savings & Lc
	Bank of America	Bellingham	98225	WA	5307300060	1939	66.00(Commercial
	Bank of America	Sumas	98295	WA	5307301020	1967	38.00(Commercial
	Bank of America	Bellingham	98226	WA	5307300020	1991	14.00(Commercial
	Bank of America	Blaine	98230	WA	5307301040	1954	51.00(Commercial
	Bank of America	Lynden	98264	WA	5307301030	1951	54.00(Commercial
	Bank of America	Bellingham	98225	WA	5307300120	1993	12.00(Commercial
	Bank of America	Bellingham	98226	WA	5307300010	1994	11.00(Commercial
	Wells Fargo	Ferndale	98248	WA	5307301050	1956	49.00(Commercial

The contents of the file are displayed in a new window for verification.

- Click  to advance to the **Main Options** page.

 *Notice that the field **Block Group** contains a 12-character FIPS code that was added by a geocoding program. The field **ZIP Code** contains each bank's ZIP code.*

PCensus User's Guide

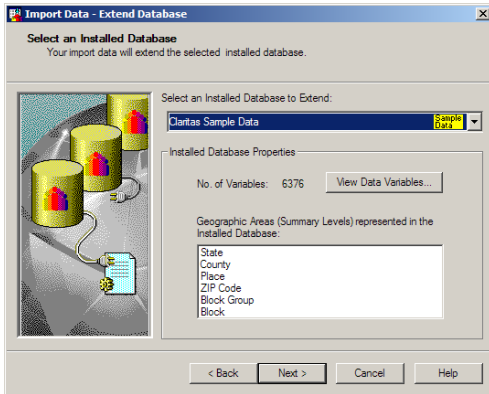


- Check Extend an installed Database .
- Click .

Specify the PCensus Database that will be Extended

Now select the installed PCensus database that will be extended with your imported data. Your data will be appended as a new category.

The PCensus database must contain a summary level that corresponds to the linking key in your input data. (ZIP code in this example.)

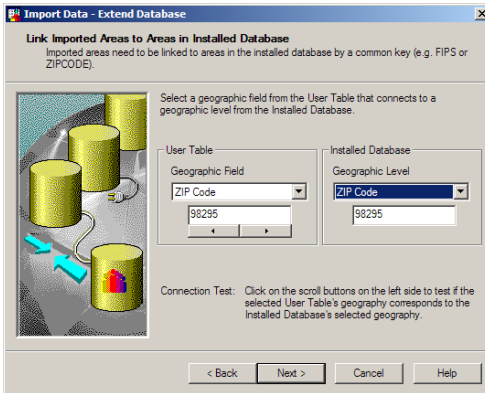


- Select the database **Claritas Sample Data**.
- Click to continue.



Specify How Data will be Merged

The next dialog box determines how the “key” field in your data will match the corresponding field in PCensus. The **Geographic Field** selector in the **User Table** panel lists the fields in your database, and the **Geographic Level** selector in the **Installed Database** panel shows the summary levels available in the installed PCensus database.

Appending Your Data to a PCensus Database



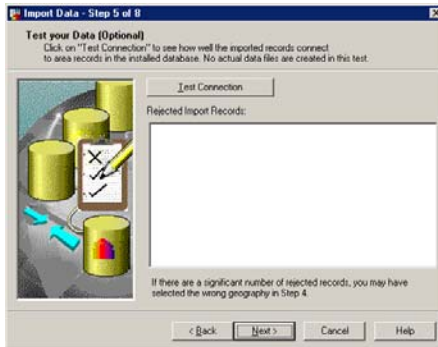
➤ Make sure that the **ZIP Code** field in the **Geographic Field** selector matches the **ZIP Code** in the PCensus **Geographic Level**.


❓ *The keys beneath the selectors give an indication of how well the keys match. The two files should track each other when the  and  buttons are used to scan through the respective files.*

➤ Click  to continue.

Test the Linkage (Optional Step)

❓ *In some cases, there may be errors in your data (for example, non-existent ZIP codes) that will cause a large number of mismatches. The next dialog box allows you to preview the matching process and decide whether to continue.*

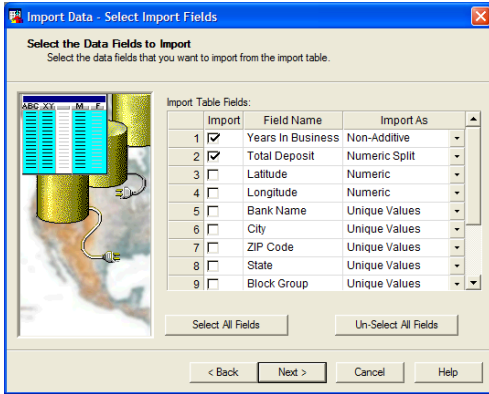


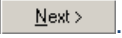
➤ Press the  button.

❓ *If a large number of mismatches occur, you may want to cancel the operation and check your data for validity.*

➤ Click  to continue.

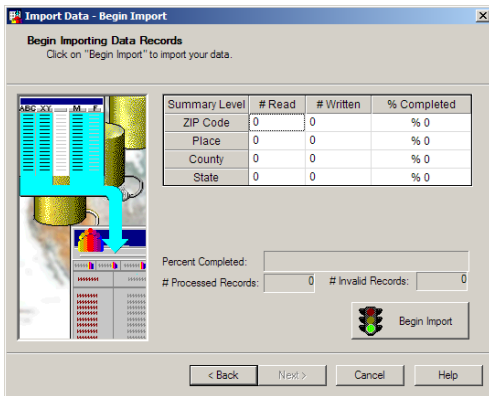
Identify the Variables in the Imported Data

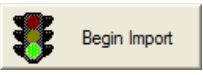


- Define **Years in Business** as a **Non-Additive Value**.
- Define **Total Deposit** as a **Numeric Split on Bank Type**.
- Define **Office Type** as a **Unique Value**.
- Click .

Note: *Text data can only be imported if the point data option is used. Otherwise, text must be treated as **Unique Values** so that it can be displayed using the “Dominant” data type.*

Build the PCensus Database



- Click  to complete the import operation.

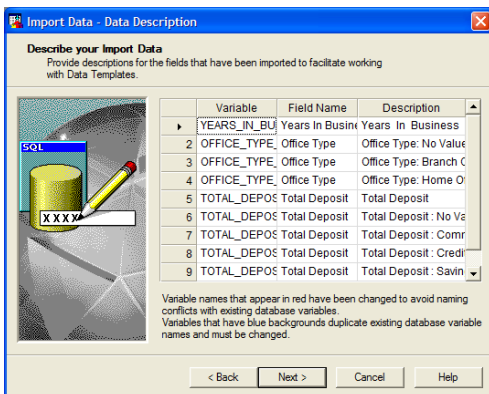
If a file contains more than one record in the same ZIP code, the records will be aggregated into a single record in the new PCensus database.

The Sample Database contains records at several geographic levels. Of these, the County, Place and State levels are higher in the geographic hierarchy than ZIP codes, and can be used to create rollups. Other area types such as block groups, census tracts or places that do not normally circumscribe ZIP codes are ignored.

Some of the bank branches have ZIP codes that are not represented in the PCensus database (these are probably non-residential ZIPS). You will be given the opportunity to view the rejected records.

- Click  to continue.

Describe your Data

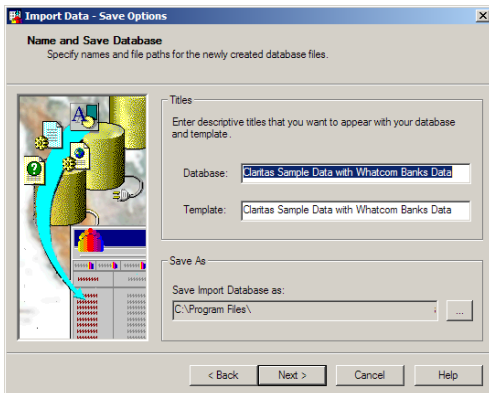


- If necessary, double-click in the **Description** field to edit descriptions for the variables that will appear in PCensus reports.

ⓘ *This step is optional. If nothing is entered, the column headings from the imported file will be used as variable names.*

- Click .

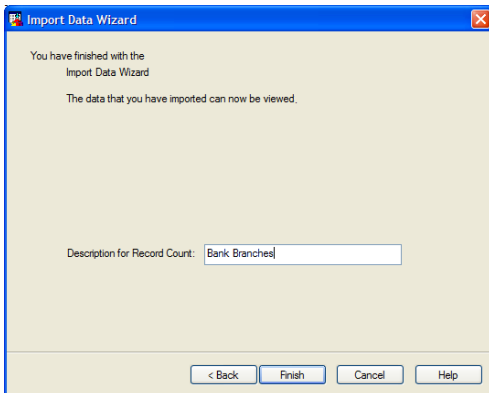
Save the Database



This dialog allows you to optionally enter new names for the database and template.

ⓘ *The default name consists of the original database name followed by "with filename Data".*

- Click to continue.



The database creation process automatically creates a variable that allows you to see the number of imported records contained in a study area. In this case it will represent the number of branches.

- Change the **Description for Record Count** to **Bank Branches**.

- Click .

The new database is complete and ready for use.

Using the Extended Database

When the import is complete, you can use the new database just like a standard PCensus database:

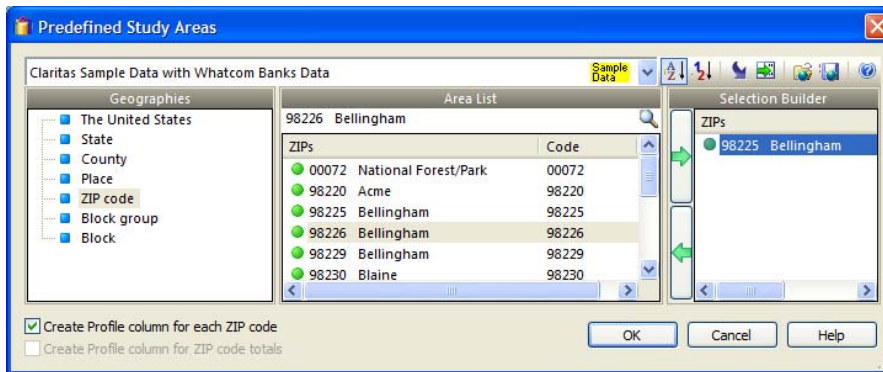
- Start a new PCensus Project.
- Select the **Whatcom Banks** database.

The screenshot shows the 'Imported Values' section of the PCensus software. It displays data for 'Whatcom Banks (Import Base Area)'. The data is organized into two main sections: 'Bank Branches' and 'Total Deposit by Bank Type'. The 'Bank Branches' section includes 'Bank Branches' (66) and 'Years In Business (Average)' (27). The 'Dominant Office Type' section shows 'Office Type Total' (66, 0.00%), 'No Value' (2, 3%), 'Branch Office' (56, 85%), and 'Home Office' (8, 12%). The 'Total Deposit by Bank Type' section shows 'Total Deposit' (2,670,196, 0.00%), 'No Value' (48,157, 2%), 'Commercial' (1,304,300, 49%), 'Credit Union' (505,244, 19%), 'Savings & Loan' (96,683, 4%), and 'Savings Bank' (715,812, 27%).

Imported Values		Whatcom Banks (Import Base Area)	
			%
Bank Branches	66		
Years In Business (Average)	27		
Dominant Office Type	Branch Office		
Office Type Total	66	0.00%	
No Value	2	3%	
Branch Office	56	85%	
Home Office	8	12%	
Total Deposit by Bank Type			
Total Deposit	2,670,196	0.00%	
No Value	48,157	2%	
Commercial	1,304,300	49%	
Credit Union	505,244	19%	
Savings & Loan	96,683	4%	
Savings Bank	715,812	27%	

By Default, PCensus creates a profile column in the current project using the database we created. The profile contains a predefined study area comprising all the ZIP codes that contain at least one bank. This study area is automatically saved as a Reference Area (see page 145).

- In the Task pane, create a new predefined study area for ZIP Code 98225.



Only the Summary levels of ZIP code or higher, for example, **County**, **Place** or **State**, will contain Bank data; these are the types that can be rolled up from the ZIP code level.

Appending Your Data to a PCensus Database

Imported Values	Whatcom Banks (Import Base Area)	98225 Bellingham
Bank Branches	66	23
Years In Business (Average)	27	34
Dominant Office Type	Branch Office	Branch Office
Office Type Total	66 0.00%	23 0.00%
No Value	2 3%	1 4%
Branch Office	56 85%	16 70%
Home Office	8 12%	6 26%
Total Deposit by Bank Type		
Total Deposit	2,670,196 0.00%	1,511,137 0.00%
No Value	48,157 2%	31,231 2%
Commercial	1,304,300 49%	553,071 37%
Credit Union	505,244 19%	501,645 33%
Savings & Loan	96,683 4%	0 0%
Savings Bank	715,812 27%	425,190 28%

The Profile shows a summary of Bank data for ZIP **98225**..

Note that the *Category* selector now shows 84 categories: our imported data plus the original 83 categories in the PCensus database.

Attaching Data by Block Group FIPS Code

When we use PCensus to profile areas, it is preferable to use a database aggregated at the Block group level, in order to achieve the maximum precision when searching circles and polygons.

Before you can attach your data to a BG level database, it must be geocoded to block groups (i.e., every record in your database must have a field containing the 12-character FIPS code for the BG in which it is located).

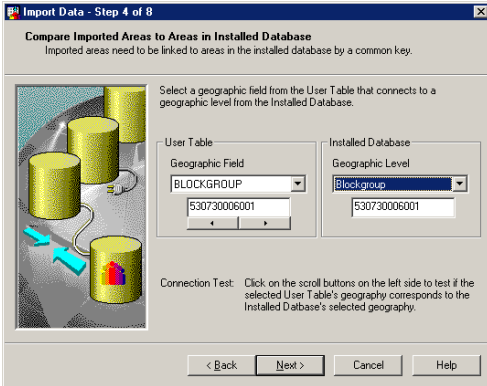
FIPS codes are used by the U.S. Census Bureau to identify the various areas for which data are collected. Each BG has a unique code that identifies the state (2 digits), County (3 digits), census tract (6 digits) and block group (1 digit) in which it is located. See the section *Demographics and the Census* in PCensus online Help.

A number of software packages are available that can attach FIPS codes to a database containing addresses; this process is referred to as geocoding.

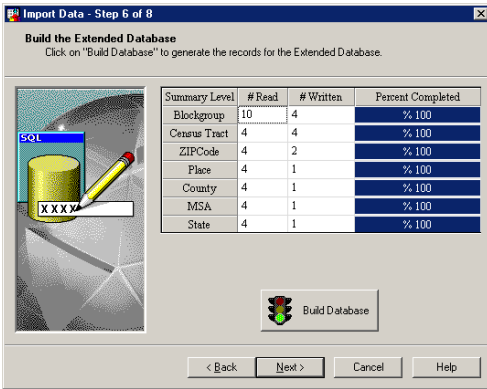
The process of importing data at the BG level is identical to that used for ZIP codes (page 193), except that in Step 4, we select matching fields corresponding to block groups instead of ZIP codes. In the illustration on page 200, the imported file contains a field labeled BLOCKGROUP that was added by a geocoding program.


- Repeat the steps for attaching data up to the step **Specify How Data will be Merged** (page 194).

PCensus User's Guide



- Select **BLOCKGROUP** in the **Geographic Field** list.
- Select **Blockgroup** in the **Geographic Level** list.
- Click **Next >** twice to advance to the Database Building step.



- Click  **Begin Import** to complete the import operation.
- Continue to the end of the Wizard.

ⓘ Remember to give the database a name that distinguishes it from the earlier ZIP code version, for example, **Bank Data (block group)**.

What Can I Do Now?

- Use this method of importing data in conjunction with the method described in the previous chapter Importing Point Data, which allows you to create a new database independent of census geography.
- Read the chapter Penetration Analysis – a CRM Tool (page 245) to see how an extended database can be used for **Penetration Analysis**.
- Use the Refresh feature (page 205) to refresh your database or add new data columns.

38 Importing Data to Create a Point Map

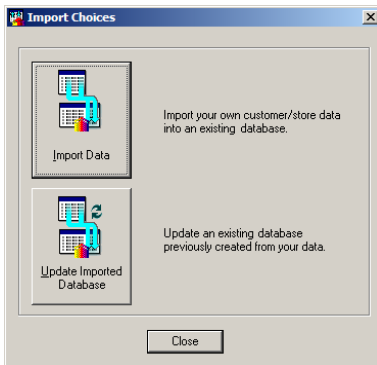
Objective

Import point data from a user database to create a map layer.

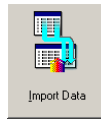
Prior Steps Required

Create or obtain a database in a standard format, for example Excel, dBase, etc., preferably containing records geocoded with Latitude and Longitude coordinates. An example file has been provided for demonstration purposes. This file contains fictitious data concerning units of coffee and tea consumed.

Steps in Mapping Imported Data

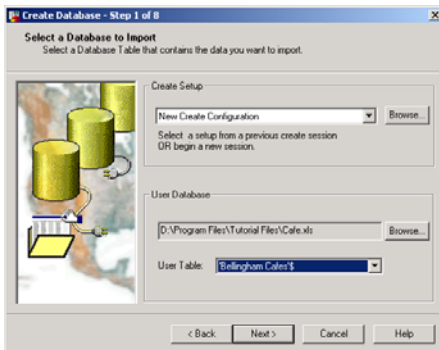



- Click the **Import** icon  to display the **Import Choices** dialog box, or select **Import Wizards** from the **File** menu.



- Click **Import Data** to start the **Create Database Wizard**.
- Advance to the **Select Import data** Wizard page.

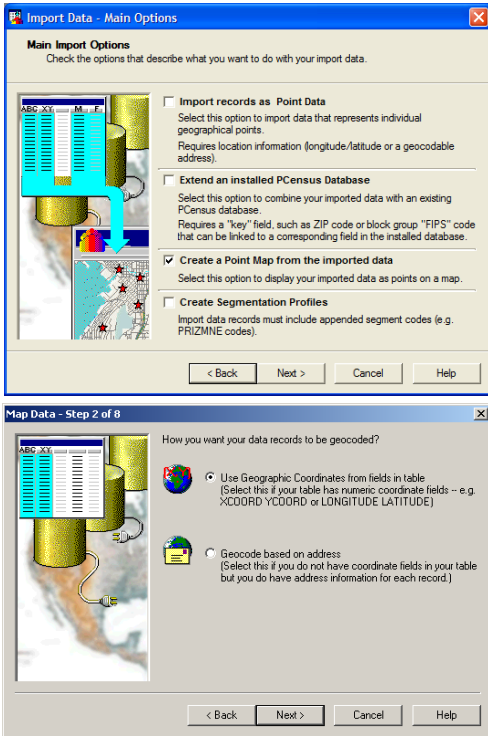
Select the Data to Import



 The **Create Setup** panel lets you re-use similar import configurations from previous sessions; it is not used the first time we import data.

- Click the **Browse...** button in the **Import Database** panel.
- Open **Whatcom Banks.xls** in the **Program Files\PCensus\Tutorial Files** folder.

PCensus User's Guide



- Check **Create a Point Map from the imported data.**
- Click **Next >** twice to advance to the **Map Point data page.**

- Select **Use Geographic Coordinates from fields in table.**
- Click **Next >** twice to advance to the **Select Geocode Method page.**

Geocoding

If your data file has not been geocoded (i.e. it does not contain latitude/longitude coordinates for each record), it may still be possible to create a map. PCensus has the ability to geocode databases internally, provided that:

- The data records contain street addresses.
- You have installed a suitable map table to allow the mapping system (which runs in the background) to resolve the addresses in your data and convert them to latitude/longitude.

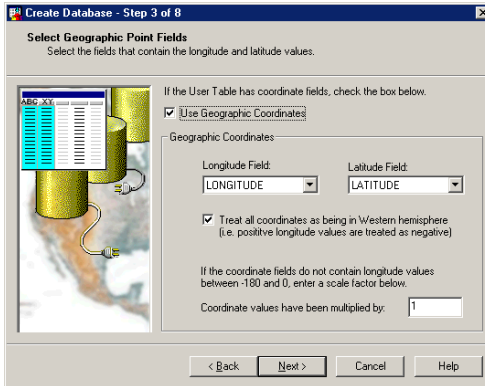
To use the internal geocoder, select **Geocode based on address** and follow the steps to identify the necessary address fields and map layers.

The success of the geocoding process depends on several factors: the consistency with which the street addresses are specified in the database, and the quality of the street network table used.

Importing Data to Create a Point Map

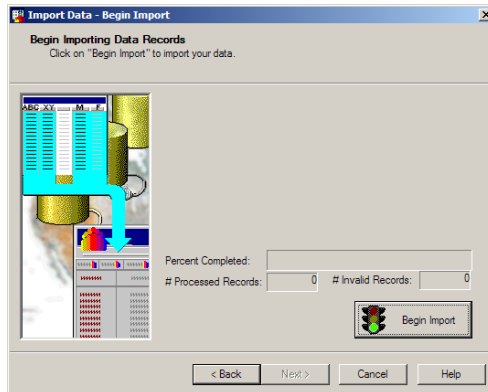
The geocoder works interactively, allowing you to resolve ambiguities and spelling errors in the addresses, but for large or problematic databases it is recommended that a dedicated geocoding service or software application be used to geocode the file before importing it to PCensus.

Identify the Geographic Coordinates



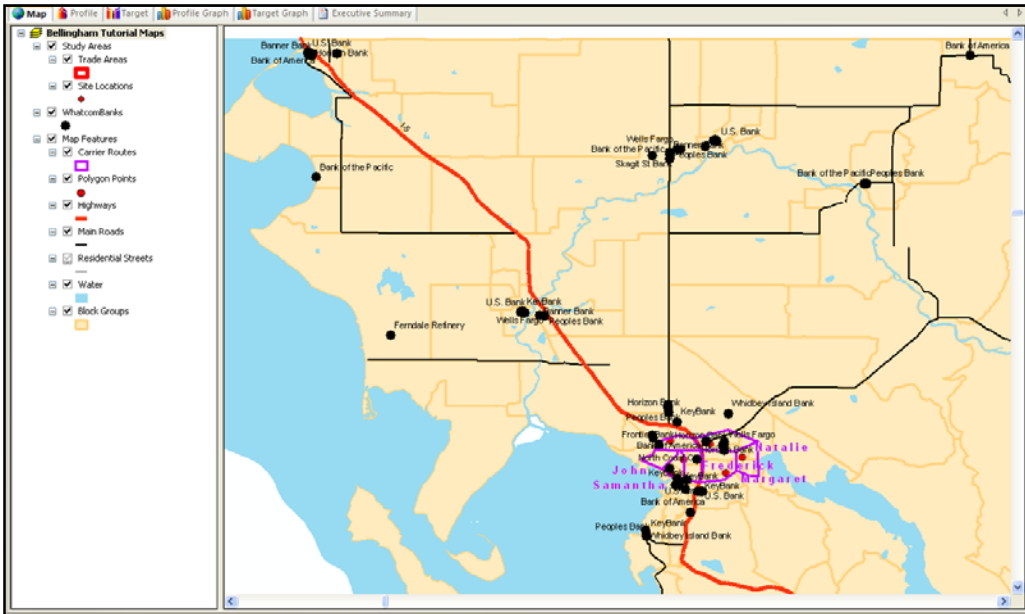
- Verify that the latitude and longitude fields are correctly assigned.
- Click **Next >**.

Create the Map



- Click **Begin Import** to create the database.
- Click **Next >** when finished.

➤ Click **Finish** in the confirmation dialog to display the new map layer.



39 Refresh Imported Data

Background

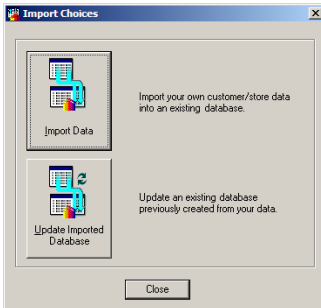
If the data that you have imported into PCensus is time-sensitive, you may need to update the PCensus database with a new version of your data from time to time. For example, if your database contains monthly cash balances or sales figures, you may need to import the changed data on a regular basis.

PCensus provides a convenient method to refresh your database by re-importing the supplied data. The refresh process assumes that the new database is in precisely the same format as the old one, including number of records, sort order and field naming. The updated file is assumed to be in the original location with the original name. If these conditions are not met, you must repeat the import process to create a new extended database; you cannot use the update procedure.

A second method of updating imported data allows us to append additional data fields to an already-extended database. This provides the benefit that we can extend a database multiple times, overcoming the limit of 256 data columns that is common to many file formats (e.g. Excel). If we wish to import more than 256 columns of data, we can append several databases one after the other. In this process, all of the consecutive data files must correspond record by record to the first file.

Refresh an Extended Database

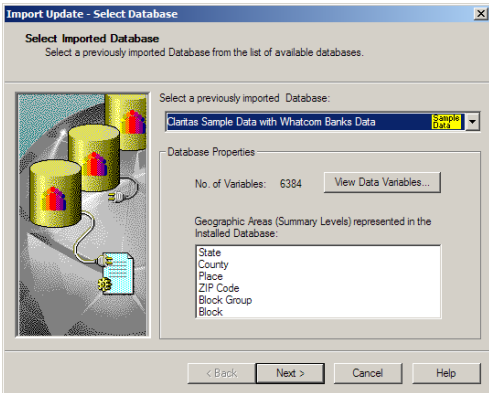
For the purposes of this demonstration, we will assume that the database that was imported in chapter 37, *Appending Your Data to a PCensus Database* has changed (if you wish, you can use Excel to change some of the data fields). To begin the process:



➤ Click the **Import** icon  to display the **Import Choices** dialog box, or select **Import Wizards** from the **File** menu.

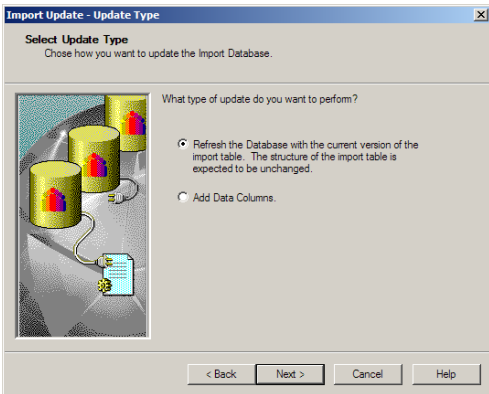
➤ Click  to start the **Create Database Wizard**.

PCensus User's Guide

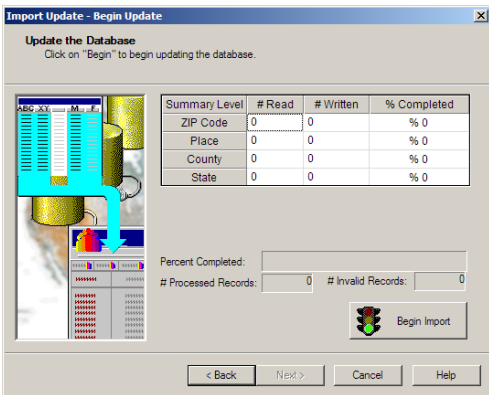


- Select the **Claritas Sample Data with Whatcom Banks Data**.
- Click **Next >**.

❓ *The list only includes databases that contain imported data.*



- Select **Refresh the Database...**
- Click **Next >**.



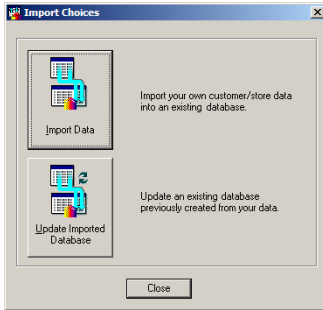
❓ *Note that you will not be prompted to specify a file containing the updated data. PCensus assumes that the original file has been updated.*


- Click **Begin Import** to complete the update.
- Click **Next >**.
- Click **Finish** in the final dialog.

If you have created and saved PCensus projects using the original version of the extended database, the update will not be reflected in the project when you open it. To update the project with the new data, use the Refresh Project feature (page 139).

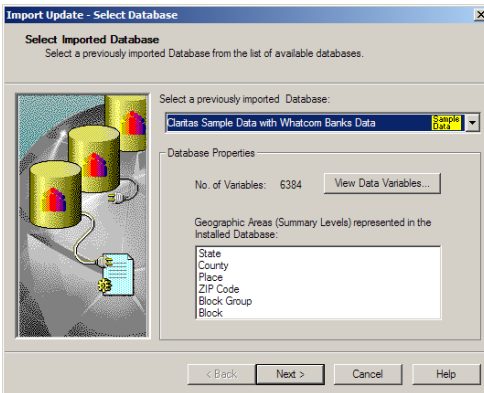
Add New Data Fields to an Extended Database

To illustrate this process, we will add a new data item to the Whatcom County Bank database.




➤ Click the **Import** icon  to display the **Import Choices** dialog box, or select **Import Wizards** from the **File** menu.

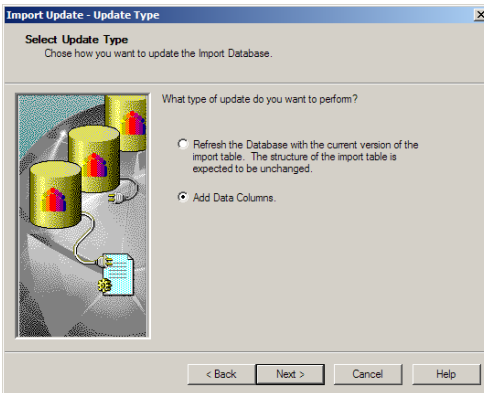
➤ Click  to start the **Create Database Wizard**.



➤ Select the **Claritas Sample Data with Whatcom Banks Data**.

➤ Click .

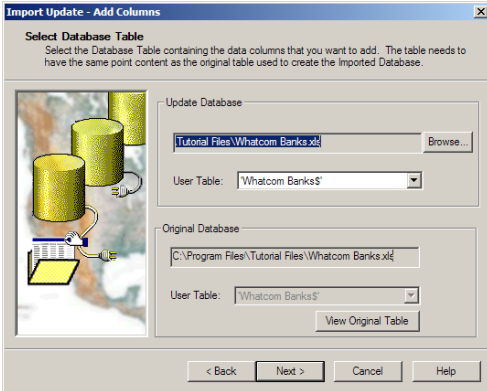
 *The list only includes databases that contain imported data.*



➤ Select **Add Data Columns**

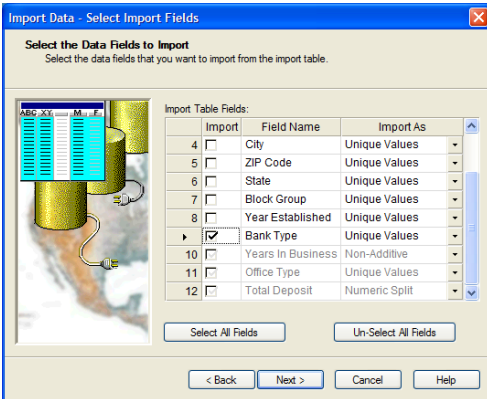
➤ Click .

PCensus User's Guide

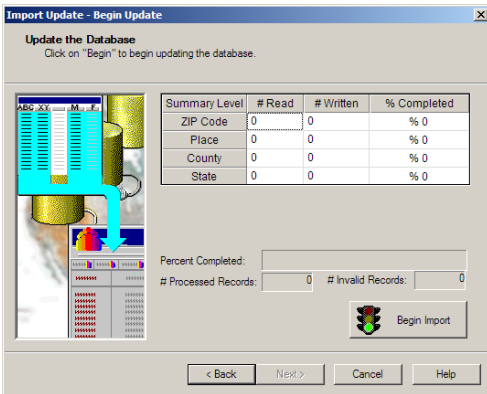


For this example we will add a new data column from the original file, so we do not need to select a different "User Table".

- Click **Next >** three times to advance to the "Unique Value" data field selector.

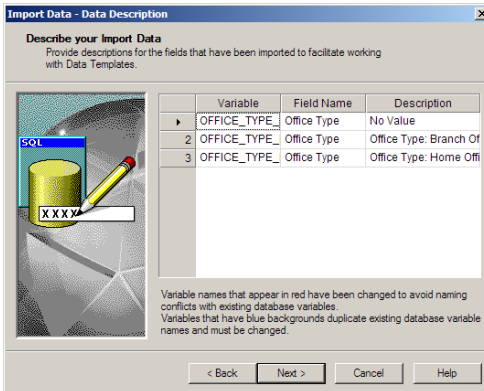


- Select **Bank Type** as a Unique Value variable.
- Click **Next >**.

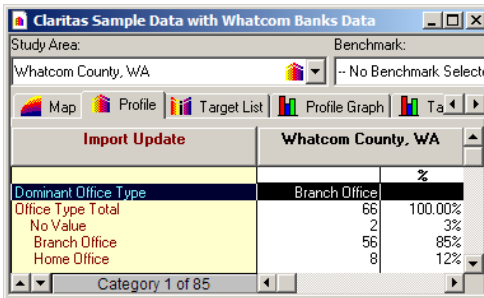


- Click **Begin Import** to complete the update.
- Click **Next >**.

Refresh Imported Data



- Review the displayed variable names and descriptions.
- Click **Next >**.
- Click **Finish** in the final dialog.



- Create a project to review the imported data.

❓ *Each time new variables are appended, they are displayed in a separate category in the data template.*


40 Using “Donut” Study Areas

Objective


Create a polygon study area containing an exclusion zone.

Background

The need occasionally arises to define a study area that contains one or more “holes” (i.e. areas whose population we do not wish to include in our study). Such holes, also referred to as “Exclusion Areas”, can easily be added to our study area definition.

 This operation requires the use of advanced features that are only accessible when using the study area “wizard”. You cannot access the features using the task window.

Steps to Create a “Donut” Study Area

➤ Click the **New Polygon** icon  in the PCensus tool bar to start the study area wizard.



➤ Select  **Tracing on Map** and click .

PCensus User's Guide



➤ Use the cross-hair cursor (+) to trace a polygon on the map similar to the one shown.



➤ Click the **Add Another Shape...** button.



➤ Select **Polygon** and click **Next >**.

The Exclusion area process also allows us to combine polygons, circles and drive times interchangeably.

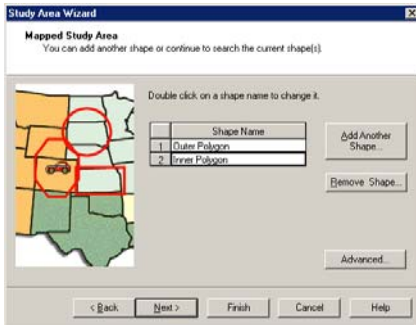


➤ Select **Tracing on Map** and click **Next >**.

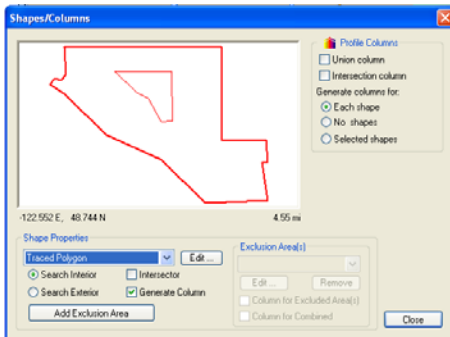
Using “Donut” Study Areas



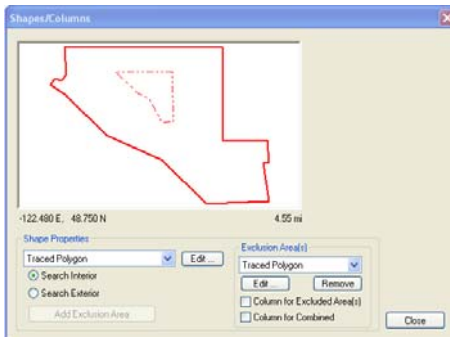
- Trace a smaller polygon inside the original one.



- Double click the shape names and edit them to identify the **Outer** and **Inner** polygons.
- Click the **Advanced...** button to display the **Shapes/Columns** dialog box.

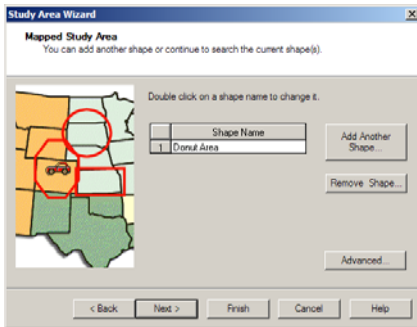


- Click **Add Exclusion Area**.



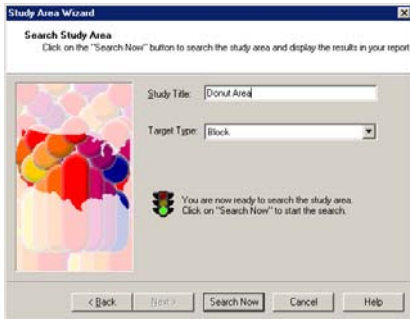
- PCensus automatically recognizes the contained area and converts it to an exclusion area.
- If you wish, you can select the option to generate a separate profile column for the excluded area.
- Click **Close** to return to the **Study Area Wizard**.

PCensus User's Guide



➤ Double click the shape name and change it to **Donut Area**.

➤ Click **Finish**.



➤ Click **Search Now**.

Pop Facts: Demographic Quick Facts	Donut Area	
Population		
2010 Projection	33,425	
2005 Estimate	30,816	
2000 Census	27,602	
1990 Census	23,089	
Growth 1990 - 2000	19.55%	
Households		
2010 Projection	14,612	
2005 Estimate	13,452	
2000 Census	12,013	
1990 Census	9,548	
Growth 1990 - 2000	25.82%	
2005 Estimated Population by Single Race Classification	30,816	
White Alone	26,338	85.47%
Black or African American Alone	391	1.27%
American Indian and Alaska Native Alone	608	1.97%
Asian Alone	1,374	4.79%

The profile contains a column for our donut study area.

41 Complex Mapped Study Areas

Objective

Define study areas using combinations of circles, drive times and polygons.

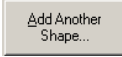
Background

In the majority of PCensus projects, you will use only one shape (a polygon, a drive time area or a set of concentric circles) to define a study area. However, there may be circumstances when it is better to use a combination of shapes, for example:

- To create an area by merging several smaller polygons, that may be non-contiguous.
- To study the fringes of a city, excluding the central core (donut area).
- To study the overlapping parts of two polygons, for example that part of a trading area that falls within a political division.
- To eliminate selected part(s) of a concentric circle set.
- To search several neighboring or overlapping areas simultaneously (this can be much faster than treating them as separate study areas).

Multiple Shapes

There are two ways in which you can define a study area by combining shapes:

- After you define a shape using the Study Area Wizard, the **Mapped Study Area** dialog box contains a button . Click this button to return to the Mapped Study Area Type dialog box and define additional shapes.
- Batch Site Processing (page 223) allows you to import multiple circle or drive time definitions from an external database.


Shape Properties

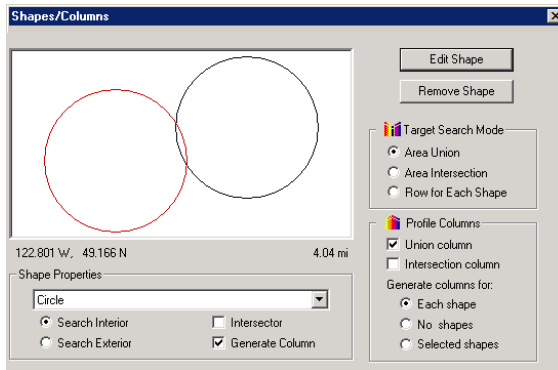
For most purposes, we define study areas using a single shape, which can actually consist of a set of concentric circles or drive times, and our study area will be defined as the entire area within the shape.

PCensus User's Guide


When we work with multiple shapes, however, we may need to specify the ways that the shapes interact with each other, for example:

- To define a study area as the area of overlap between two shapes.
- To define a “donut” area – the area that is **inside** one polygon, but **outside** another one.

We can apply properties to shapes using the **Shapes/Columns** dialog box, which is accessed by clicking the  button in the **Mapped Study Area** dialog box.



This dialog box defines the interactions between multiple shapes. When multiple shapes are present, their definitions and attributes can be modified individually.

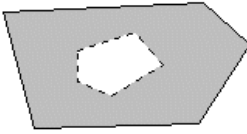
 For detailed information on the features of this dialog box, press the **F1** key to access the PCensus Help system.

A shape can have the following properties:

- **Interior/Exterior** property.
- **Intersector** property.
- **Generate Column** property.

Interior/Exterior Property

The **Interior/Exterior** attribute determines whether a shape will include target points inside or outside its boundary. See “Steps to Create a “Donut” Study Area”, page 211.

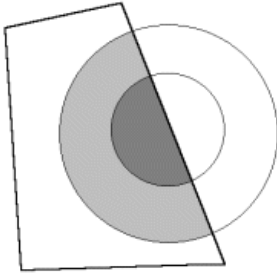


The inner polygon has the **Exterior** property.

The Intersector Property

The **Intersector** property is an advanced feature that provides methods to allow the effect of one shape to be modified by other shapes. **If a shape is an intersector, it will generate a column that aggregates only those data points inside both the intersector and at least one other (non-intersector) shape.**

The most common application of intersectors is for the modification of circular or drive time study areas. See “Steps to Create a Modified “Radius” Study Area”, page 218.



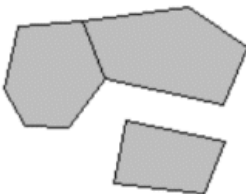
The concentric circle set has the **Intersector** property. Only the part of the circle inside the polygon will be searched.

Each of the shaded areas will generate a separate profile column.

Profile Columns

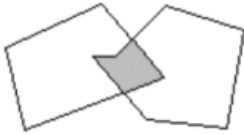
The **Generate Column** property indicates that the selected shape will be represented by a column in the profile browser.

When more than one shape has been defined for a study area, a special set of controls allows us to specify which shapes or combinations of shapes will be represented by columns in the project’s profile browser:



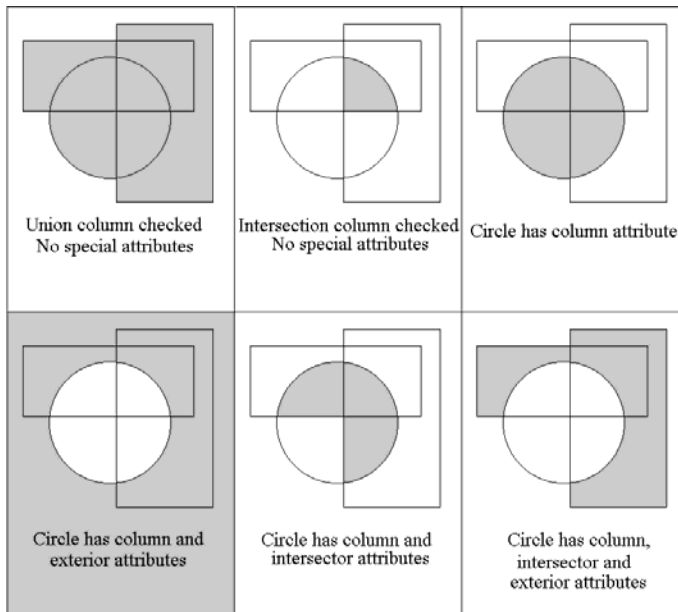
A **Union** column contains the total data for the shaded area.

PCensus User's Guide





An **Intersection** column contains data for the area where all shapes overlap.

The following illustration shows the effect of some complex combinations of properties. In each case, the shaded area will generate a profile column.

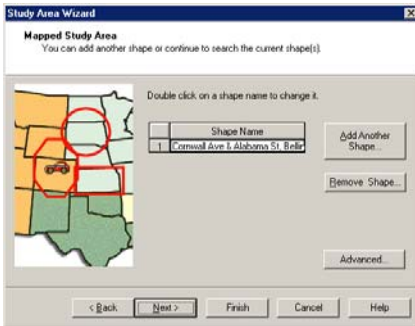


Steps to Create a Modified “Radius” Study Area

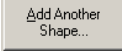
 This operation requires the use of advanced features that are only accessible when using the study area “wizard”. You cannot access the features using the task window.

- Click the **New Circle** icon  in the PCensus tool bar to start the study area wizard.

Complex Mapped Study Areas



➤ Follow the steps to create a circle study area until you reach the **Mapped Study Area** dialog box as shown.

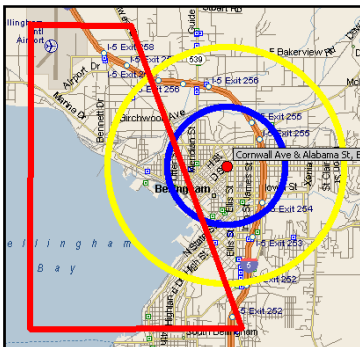
➤ Click the  button.



➤ Select  **Polygon** and click .

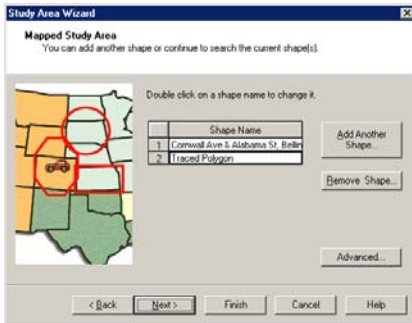


➤ Select  **Tracing on Map** and click .

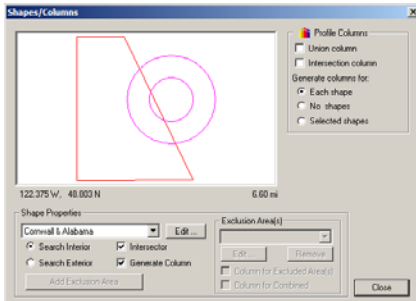


➤ Trace a polygon that cuts off part of the circle set.
➤ Double click the last point to close it.

PCensus User's Guide



- Click the **Advanced...** button to display the **Shapes/Columns** dialog box.



- Select the Circle area, either by clicking in the diagram or selecting it in the **Shape Properties** list.

- Check the **Intersection** button.

? *If the circle is an **intersector**, only that part that is intersected by another shape will be searched.*

- Select the **Polygon**.

- Clear the **Generate Column**.

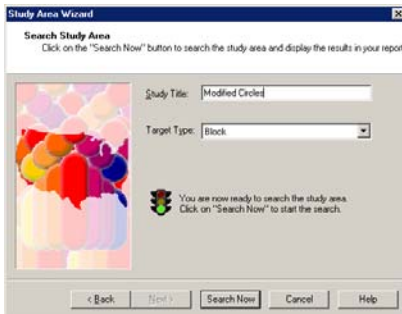
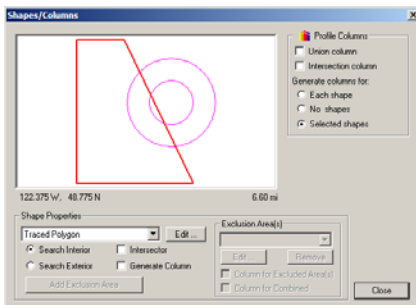
? *The polygon is of no interest by itself.*

- Clear the **Union column** box.

- Clear the **Intersection column** box.

- Click **Close** to return to the **Study Area Wizard**.

- Click **Finish**.



- Edit the Study Title to **Modified circles**.

- Click **Search Now**.

Pop Facts: Demographic Quick Facts	Cornwall Ave & Alabama St, Bellingham, WA 98225 0 - 1 mi	Cornwall Ave & Alabama St, Bellingham, WA 98225 0 - 2 mi
Population		
2010 Projection	2,008	10,859
2005 Estimate	1,971	10,612
2000 Census	1,923	10,335
1990 Census	1,813	9,083
Growth 1990 - 2000	6.10%	13.78%
Households		
2010 Projection	825	3,865
2005 Estimate	797	3,746
2000 Census	763	3,621
1990 Census	731	3,509
Growth 1990 - 2000	4.40%	3.19%
2005 Estimated Population by Single Race Classification	1,971	10,612
White Alone	1,774 90.01%	9,143 86.15%
Black or African American Alone	17 0.88%	119 1.12%
American Indian and Alaska Native	22 1.12%	124 1.17%

The profile contains columns for the parts of the circle areas that also fall inside the polygon.

What Can I Do Now?

The two examples above illustrate the most common uses for combined polygons. Many other combinations are possible.

The other common situation where multiple shapes may be used is in **Batch Site Processing** (page 223). In this case, the shapes are usually used to create separate profile columns; and it is seldom necessary to define complex relationships between them.


42 Batch Site Processing

Objective

Create a set of profile reports based on drive time areas around a set of business locations.

Background

Companies that have a large number of business locations often want to create separate profile reports for each location. It would be tedious to find locations one at a time on the map and create the reports separately, so PCensus allows you to import a list of locations from an external database; it then automatically creates separate reports for each site.

 *This capability is of particular benefit when the reports need to be updated on a regular basis, for example, whenever a new “current-year estimates” database becomes available. With batch processing, this task becomes a simple matter of re-running the batch file against the new data.*

A side-benefit of batch site processing is the ability to display the individual site results row by row in a PCensus **Target List** report, to allow quick comparison of their demographic characteristics (see Chapter 43, User Defined Target Areas, page 229).

Whenever multiple sites have been defined in a project, either by processing a batch site file, or by sequentially defining individual study areas, you can use the **Page Columns** control in the **Print Profile Report** dialog box to allow printing of each site as a separate report. The **Page Columns** control provides additional options for printing batched reports.

Requirements for a Batch Site File


A batch site file must be created externally to PCensus using a database program. Several common file formats are supported, including Excel, dBase and Microsoft Access. In each case, the information for each site to be processed is contained in a single record or table row. The following information is required for each site:

- **Site identification:** A text field containing a company name, store name or other information to identify the site in reports generated by PCensus.
- **Latitude and Longitude:** Coordinates of locations in decimal degrees, to allow automatic generation of circle or drive time study areas centered on

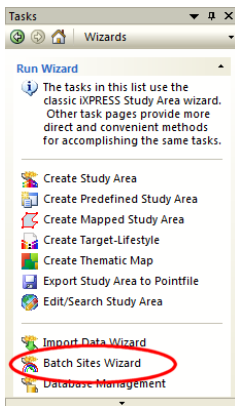
PCensus User's Guide

each location. If the database does not contain coordinates, PCensus can geocode the locations based on street addresses.

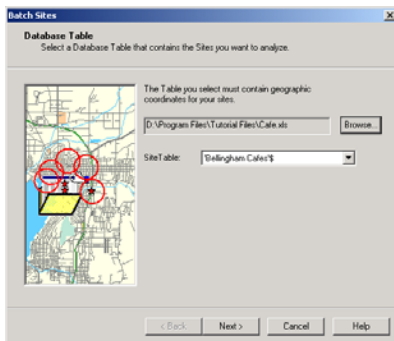
- **Circle radius** (Optional): One or more fields specifying a radius around the site (in miles or kilometers).
- **Drive time** (Optional): One or more fields specifying a drive time zone around the site (in minutes).

 *The optional radius and drive time fields allow different sized circles or drive times to be applied to each site. If these fields are not specified, identical radii or drive times will be applied to each site.*

Steps to Process Batch Sites




➤ Select **Batch Sites Wizard** in the **Wizards** task pane.



➤ Click **Browse...** to open a file of site locations.

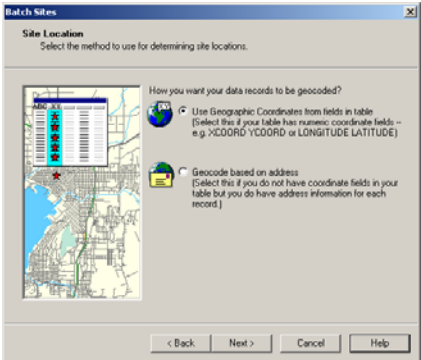
➤ Select **Files of Type: Excel (*.xls)**.

Open **Cafe.xls** in the **Program Files\PCensus\Tutorial Files** folder.

 *The contents of the file are displayed in a new window for verification.*

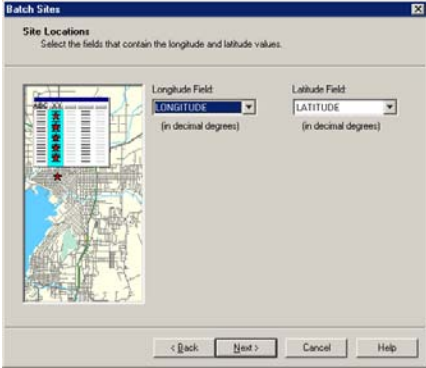
➤ Click **Next >**.

Specify Latitude and Longitude



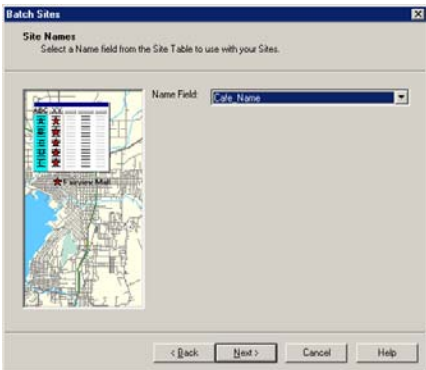
❓ If your batch site file does not contain latitude/longitude coordinates, PCensus may be able to geocode records based on street addresses (page 183).

- Select Use Geographic Coordinates from fields in table.
- Click .



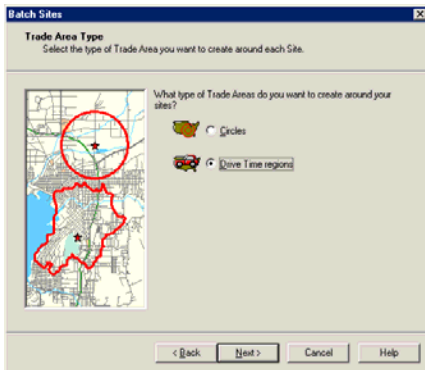
- Verify that the **Latitude Field** and **Longitude Field** are correctly assigned.
- Click .

Select a Field for Naming Sites



- Select the field that contains text to identify the site locations; in this case **Cafe_Name**.
- Click to continue.

Select the Study Area Type

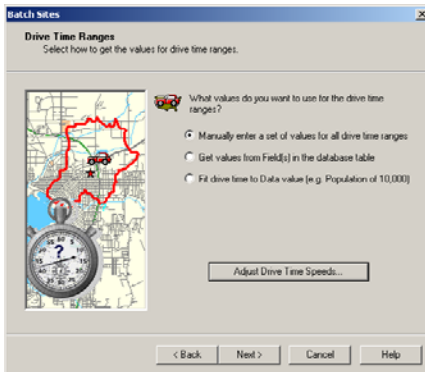


? *Batch Site reports can be created for circles or drive time polygons.*

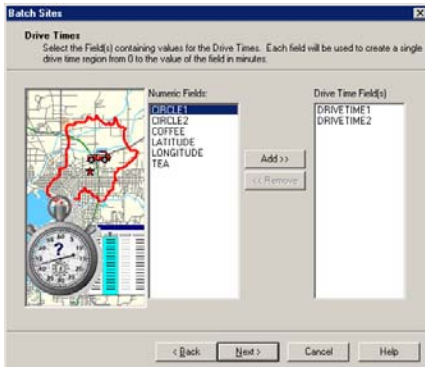
- Check  Drive Time regions
- Click to continue.

? *We could also define drive times or circles based on demographics, using the “Data Fit” feature (page 53).*

? *If we wanted to apply the same set of drive times to every site, we could enter the values manually, but in this case the batch site file has fields containing individual drive times (in minutes) to be used for each site.*



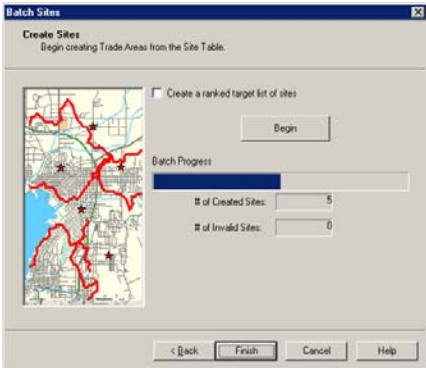
- Check Get values from Field(s) in database table
- Click to continue.



The batch file includes two numeric fields containing the drive times to be applied to each site.

- Select the **Numeric Fields** **DRIVETIME1** and **DRIVETIME 2** and click to move them into the **Drive Time Field(s)** column.
- Click .

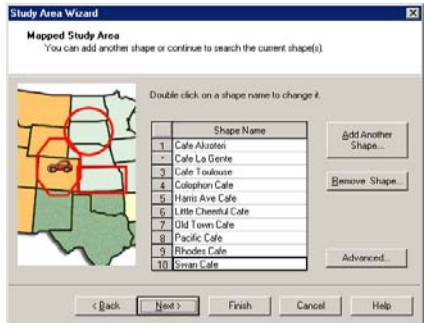
Create Sites



It is possible to use our batch sites to create a target list (see Chapter 43, User Defined Target Areas, page 229); for now we will just create profile reports.

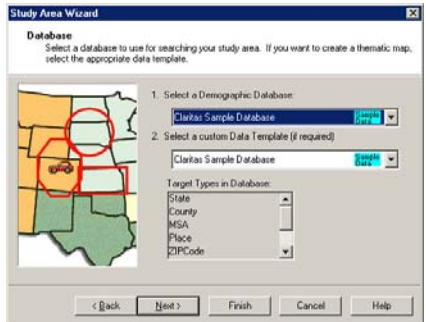
➤ Clear the Create a ranked target list of sites box.

➤ Click to generate the drive times.



At this point, the Batch Sites Wizard has finished, and control switches to the **Mapped Study Area** dialog box of the Study Area Wizard. The sites to be processed are listed for review.

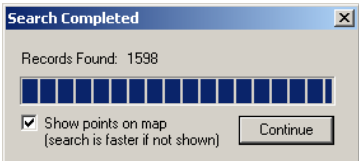
➤ Click .



➤ Select the **Claritas Sample Data**.

➤ Click .

Click in the **Search Study Area** dialog box.



➤ When the search is complete, click to close the progress indicator.

PCensus User's Guide

Pop Facts: Demographic Quick Facts	Area Union Batch Sites: 'Bellingham Cafes\$'		Cafe Akroteri 0 min - 5 min		Cafe Akroteri 0 min - 10 min		Cafe La Gente 0 min - 5 min	
Population								
2010 Projection	94,532		65,320		92,062		66,546	
2005 Estimate	88,135		60,837		85,892		62,060	
2000 Census	80,277		55,341		78,339		56,571	
1990 Census	64,290		45,864		62,942		46,902	
Growth 1990 - 2000	24.87%		20.66%		24.46%		20.62%	
Households								
2010 Projection	39,237		27,413		38,234		27,934	
2005 Estimate	36,385		25,396		35,469		25,918	
2000 Census	32,886		22,932		32,088		23,459	
1990 Census	25,787		18,603		25,248		19,044	
Growth 1990 - 2000	27.53%		23.27%		27.10%		23.19%	
2005 Estimated Population by Single Race Classification	88,135		60,837		85,892		62,060	
White Alone	76,763	87.10%	52,260	85.90%	74,682	86.95%	53,380	86.01%
Black or African American Alone	906	1.03%	700	1.15%	888	1.03%	707	1.14%
American Indian and Alaska Native	1,318	1.50%	983	1.62%	1,289	1.50%	1,004	1.62%

The sites specified in the batch file are listed as individual columns. Note that the first column contains an “unduplicated” total for all sites. Each data point is only counted once, even if the drive times overlap.

What Can I Do Now?

- Create a target list using the batch file, (see Chapter 43, User Defined Target Areas, page 229).

43 User Defined Target Areas

Objective

Create a Target List comparing areas defined by drive time polygons.

Background

We have seen how to create a target list report comparing ZIP code areas in Whatcom County, WA.

When we use a study area defined by multiple shapes (circles, drive times, or polygons), for example by using **Batch Site Processing** (page 223), we can go a step further and use the shapes themselves as targets in the report.

This method provides a powerful tool for comparing the demographics of the trading areas of a large number of sites.

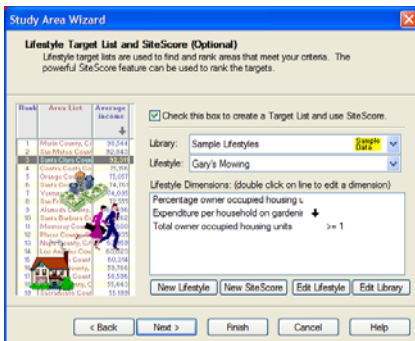
Prior Steps Required

Follow the steps to create Batch Sites for Drive times (page 223) as far as the **Create Sites** dialog box (page 227). This time, do not clear the

Create a ranked target list of sites before clicking to generate the drive times.

➤ Click two more times to advance to the **Lifestyle Target List** dialog box.

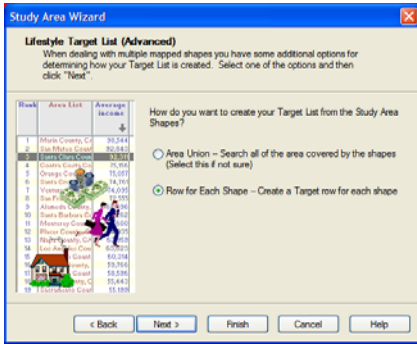
Create a Target List of Drive Time Areas



➤ Note that Check this box to create a Lifestyle Target List is checked and the details of the **Lifestyle Target List** dialog box are visible.

➤ Click .

PCensus User's Guide



Note that the option: Row for Each Shape -- Create a Target row for each shape has been selected automatically. The other options will result in a target list containing individual targets from the database.

Click .

Click in the **Search Study Area** dialog box.

Rank	Batch Sites: Bellingham Cafes? Shape List	Percentage owner occupied housing units	Expenditure per household on gardening services	Total owner occupied housing units
1	Rhodes Cafe 0 min - 10 min	53.10	154	17,276
2	Swan Cafe 0 min - 10 min	52.59	153	16,884
3	Harris Ave Cafe 0 min - 10 min	52.56	153	16,826
4	Little Cheerful Cafe 0 min - 10 min	52.58	153	16,885
5	Cafe La Gente 0 min - 10 min	52.58	153	16,885
6	Cafe Akroteri 0 min - 10 min	52.55	153	16,863
7	Cafe Toulouse 0 min - 10 min	52.54	153	16,851
8	Pacific Cafe 0 min - 10 min	52.54	153	16,851
9	Old Town Cafe 0 min - 10 min	52.52	153	16,837
10	Colophon Cafe 0 min - 10 min	50.22	150	14,439
11	Rhodes Cafe 0 min - 5 min	48.94	147	11,576
12	Colophon Cafe 0 min - 5 min	41.43	146	4,585
13	Swan Cafe 0 min - 5 min	45.96	142	10,745
14	Pacific Cafe 0 min - 5 min	45.80	141	10,973
15	Cafe Toulouse 0 min - 5 min	45.80	141	10,973
16	Harris Ave Cafe 0 min - 5 min	44.57	141	10,015
	Accepted 20 Targets	49.59	148	267,299
	Rejected 0 Targets			0
	Total 20 Targets	49.59	148	267,299

The target list contains entries for the specified Drive Time areas for each café.

Note that sites with multiple drive times (0 to 5 minutes, 0 to 10 minutes) have multiple entries in the list. If the lifestyle is not ranked, drive times for each location are consecutive.

What Can I Do Now?

- Use the target list to rank or filter the demographics of each drive time zone in the same manner that we use pre-defined targets like ZIP Codes or Block groups.
- Use user defined target areas to compare the trading areas of large numbers of business locations.
- Use user-defined targeting in conjunction with imported user-supplied data (see Chapter 37, Appending Your Data to a PCensus Database, page 191), for Penetration Analysis (page 245) to compare the performance of business locations.

44 Using Segmentation Data for Market Analysis

Overview

Claritas' "MyBestProfiles" Web site allows you to download the results of thousands of consumer behavior surveys compiled by Simmons and MRI (Mediamark Research Inc.).

PCensus lets you combine the results of these surveys with PRIZM consumer segmentation data or P\$YCLE_{NE} financial segmentation data to predict consumer behavior for products, services or activities in any geographical area.


For example, you can create a PCensus profile report for any area showing market penetration estimates for a restaurant chain (such as Wendy's) or a beverage (such as Coca-Cola). Additionally, you can use PCensus 'targeting' to identify areas of high market potential.

To find out how you can download profile data for use with PCensus, contact your PCensus product specialist.

The **Profile Import Utility** that is included with PCensus converts profiles you have downloaded and saved in comma-delimited text (.csv) file format into PCensus report templates. These templates can be used to predict usage, expenditure, and market penetration for profiled items in any geographical area defined in PCensus.

Before using profiles, make sure that you have installed a suitable PCensus database that includes PRIZM or P\$YCLE_{NE} segmentation.

Using the Profile Import Wizard

 **Note:** PCensus must not be running while you are using the Profile Import Wizard. If PCensus is running, the template and lifestyle files that are created will not be properly registered.


Before using the Profile Import Wizard, you must have already downloaded the required profiles from www.mybestprofiles.com. After retrieving your files, save all downloaded profiles to a suitable folder in .csv format.

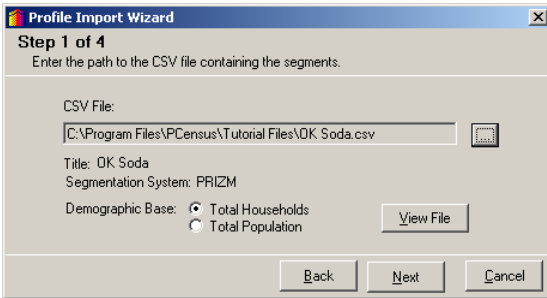
 **Hint:** It is recommended that you rename downloaded profiles. Renamed profiles are easier to locate. For example, rename the file **fb99999.csv** to **OK Soda.csv**, to reflect the contents of a profile that you have downloaded.

PCensus User's Guide


To demonstrate the use of downloaded profiles, we have provided a fictitious example for a product called **OK Soda** to show how profile data in a downloaded csv file can be attached to the PRIZM population data in our sample database.



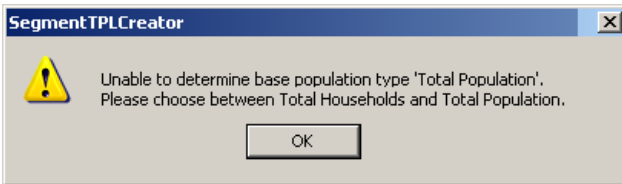
- Click the Windows **Start** button.
- Select **Programs**.
- Select **PCensus Demographics**.
- Select **Profile Wizard** to display the **Profile Import Wizard** dialog box.
- Click .



- Click the  button and open **OK Soda.csv** in the **Program Files\PCensus\Tutorial Files** folder.

 *Note: For a real profile, open the file that you have downloaded*

For most profiles, PCensus can automatically determine the best way to connect the profile to your installed database, but for some segmentation systems you may need to select a demographic base (i.e., Total Households or Total Population). In this case, the following warning is displayed:

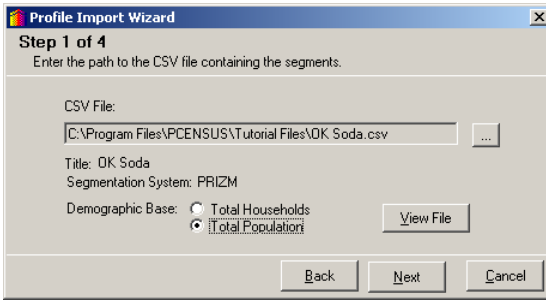


- Click  to close the dialog box.

If the selected profile uses another demographic base, for example, Total Adults, you must decide which of the bases (**Total Households** or **Total Population**) will be most appropriate.

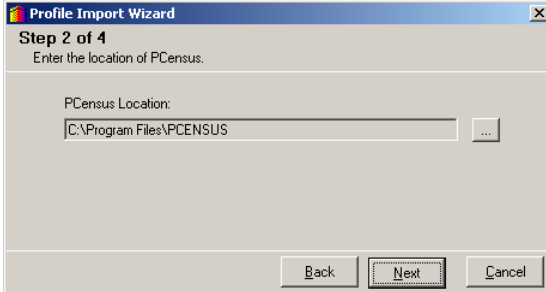
 *If you are unsure which base is required, click  to examine the contents of the csv file; the text in the first line of the file will provide the required information.*

Using Segmentation Data for Market Analysis




➤ Select **Total Population**.

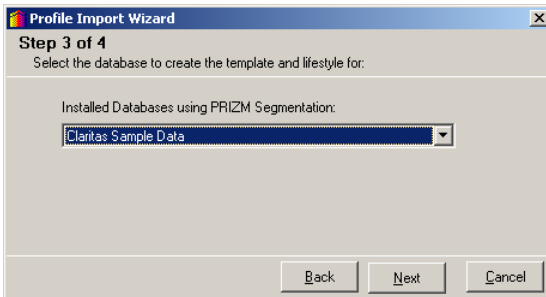
➤ Click **Next**.



➤ Check that the indicated location for the PCensus program is correct.

❓ Otherwise, click the  button and select the correct location.

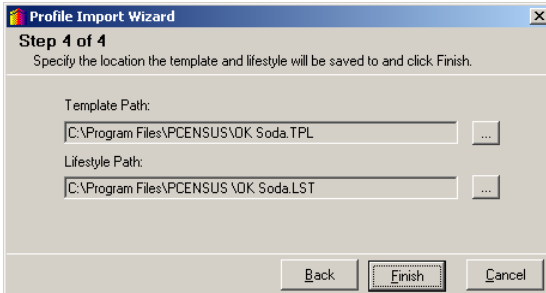
➤ Click **Next**.



The selection box displays a list of the installed PCensus databases available with the segmentation system specified by the .csv file.

➤ Select the **Claritas Sample Data**.

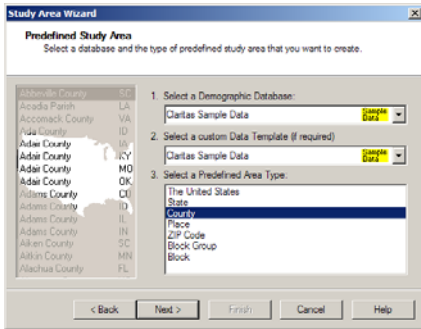
➤ Click **Next**.



You can optionally specify paths and filenames for the template and lifestyle files. By default, they are given the same name as the .csv file.

➤ Click **Finish** to create the template and lifestyle.

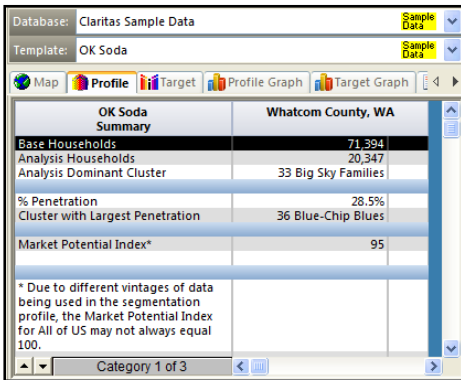
Creating a PCensus Project Using an Imported Profile



- Start PCensus and follow the steps to create a predefined Study Area.
- In the Predefined Study Area dialog, select the **Claritas Sample Data**.
- Select the OK Soda template that was created by the Profile Import Wizard.
- Complete the steps to create a profile, for example for Whatcom County.

The data template contains three categories:

- Summary
- Analysis Population
- Base Population



Category 1: **Summary**
 Displays the Analysis totals, Penetration index, and Market Potential index for the profiled commodity in the study area.

Using Segmentation Data for Market Analysis

OK Soda Analysis Households		Whatcom County, WA	
Total Households	71,394	% base	
Estimated Analysis Households	20,347	28.5%	
Dominant Analysis Cluster	33 Big Sky Families		
Customer Households by PRIZM NE Cluster		20,347	% base
1 Upper Crust	217	1.1%	
2 Blue Blood Estates	112	0.6%	
3 Movers & Shakers	275	1.3%	
4 Young Digerati	0	0.0%	
5 Country Squires	237	1.2%	
6 Winner's Circle	74	0.4%	
7 Money & Brains	0	0.0%	
8 Executive Suites	77	0.4%	
9 Big Fish, Small Pond	674	3.3%	
10 Second City Elite	218	1.1%	
11 God's Country	425	2.1%	
12 Brite Lites, Li'l City	304	1.5%	
13 Upward Bound	96	0.5%	
14 New Empty Nests	75	0.4%	
15 Pools & Patios	151	0.7%	

Category 2: Analysis

Displays the number of people or households using the commodity by market segment.

OK Soda Base Households		Whatcom County, WA	
Base Households by PRIZM NE Cluster	71,394	% base	
Dominant Cluster	47 City Startups		
1 Upper Crust	696	1.0%	
2 Blue Blood Estates	382	0.5%	
3 Movers & Shakers	918	1.3%	
4 Young Digerati	0	0.0%	
5 Country Squires	751	1.1%	
6 Winner's Circle	325	0.5%	
7 Money & Brains	0	0.0%	
8 Executive Suites	270	0.4%	
9 Big Fish, Small Pond	2,230	3.1%	
10 Second City Elite	737	1.0%	
11 God's Country	1,319	1.8%	
12 Brite Lites, Li'l City	916	1.3%	
13 Upward Bound	375	0.5%	
14 New Empty Nests	286	0.4%	
15 Pools & Patios	530	0.7%	
16 Ephebian Mix	0	0.0%	

Category 3: Base Population

Displays the total population or household count in each segment.

We have now created a profile that can be used to evaluate a particular market in terms of its socio-demographic characteristics.

Creating a Target Report

The Profile Import Wizard creates a lifestyle definition suitable for generating target reports. This provides an effective method for identifying areas with a high market potential index or penetration. For example, we can compare the ZIP codes in Whatcom County.

PCensus User's Guide

Rank	Whatcom County, WA ZIP code List	Total OK Soda Market Potential	Average OK Soda % Penetration	Base Households	Analysis Households
1	98262 Lummi Island	109	32.93	453	143
2	98295 Sumas	108	32.49	742	241
3	98247 Everson	108	32.43	2,745	890
4	98220 Acme	108	32.35	162	52
5	98240 Custer	107	32.32	1,031	333
6	98266 Maple Falls	107	32.05	1,104	354
7	00072 National Forest/Park	103	30.92	26	8
8	98244 Deming	103	30.85	894	276
9	98264 Lynden	101	30.41	6,483	1,971
10	98229 Bellingham	95	28.56	11,668	3,333
11	98248 Ferndale	94	28.34	7,113	2,016
12	98281 Point Roberts	94	28.31	656	186
13	98226 Bellingham	94	28.28	13,631	3,855
14	98230 Blaine	93	27.90	5,082	1,418
15	98225 Bellingham	89	26.65	18,888	5,034
Accepted	15 Targets	95	28.46	70,658	20,110
Rejected	0 Targets			0	0
Total	15 Targets	95	28.46	70,658	20,110

Search Target List

Note: You can easily summarize data. For example, to compute overall statistics for the top five markets, use the mouse to select the targets, then right click to "Profile total of selected targets".

45 Using Segmentation Data for Customer Analysis

Background

In the preceding chapter, we saw how survey-based profile data can be used to predict penetration and market potential. The PCensus data import feature allows us to use a similar process based on customer data.

To take advantage of this capability, each record of our customer file must include a segment code; in the case of PRIZM, this will be a two-digit code in the range 1-66. The codes represent PRIZM segments (01 Upper Crust, 02 Blue Blood estates etc.)

Records must also include a block group FIPS code, in order that the file can be appended to an installed PCensus database. A number of services are available to append segment codes and block group codes to customer databases; contact your PCensus supplier for information.

For the purposes of this discussion, we will refer to a database of fictitious customers in Whatcom County, contained in the Excel workbook

\\Program Files\PCensus\Tutorial Files\Import Sample.xls.

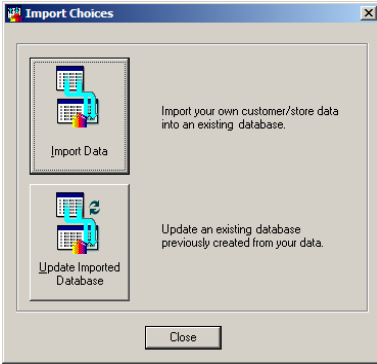
	A	B	C	D	E	F	G	H	I
1	Customer Name	PrizmNE Segment	Income	Age	Sex	Purchases	Longitude	Latitude	blockgroup
2	Customer1	09	72241	40	F	1	-122.476502	48.695368	530730012004
3	Customer10	09	42261	29	M	1	-122.789158	48.980347	530730104021
4	Customer100	01	72721	63	F	1	-122.502477	48.719684	530730011003
5	Customer101	56	49091	48	M	1	-123.04958	49.001734	530730110001
6	Customer102	09	136795	36	F	1	-122.350491	48.753727	530730008015
7	Customer103	10	74573	69	F	1	-122.490425	48.739675	530730011001
8	Customer104	09	118699	52	F	1	-123.087046	48.996856	530730110002
9	Customer105	23	88400	29	F	1	-122.578277	48.997813	530730104016
10	Customer106	23	54317	43	M	1	-122.376967	48.683085	530730012003
11	Customer107	28	55444	36	M	1	-122.734904	48.928321	530730104023
12	Customer108	09	90329	66	F	1	-122.789158	48.980347	530730104021
13	Customer109	23	75941	28	F	1	-122.400855	48.857652	530730107001
14	Customer11	23	42449	29	M	1	-122.400855	48.857652	530730107001
15	Customer110	03	91821	46	F	1	-122.414722	48.788564	530730008014
16	Customer111	33	62766	29	F	1	-122.350495	48.918312	530730107003
17	Customer112	53	49595	32	M	1	-122.490651	48.727749	530730011002
18	Customer113	11	47206	53	M	1	-122.396317	48.748032	530730008023

PCensus can calculate penetration ratios for each segment in any geographic area, based on the number of customers for each segment in the area (from

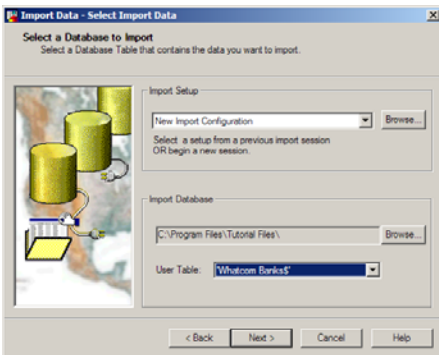
PCensus User's Guide

the customer database) and the total number of households for the same segment and area (from the PCensus database).


Steps to Import Segment Coded Data



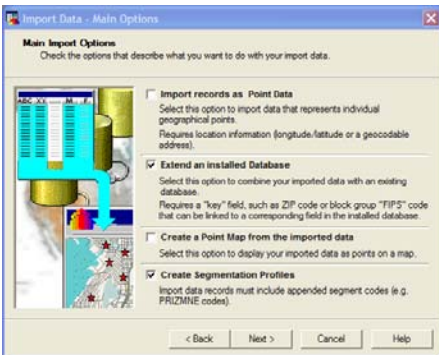
- Start the **Import Data Wizard** from the task pane (or click the **Import** icon ) to display the **Import Choices** dialog box.
- Click **Import Data** to start the **Create Database Wizard**.
- Advance to the **Select Import Data** step.



- Click the **Browse...** button in the **Import Database** panel.
- Select **Files of Type: Excel (*.xls)**.
- Open **Import Sample.xls** in the **Program Files\PCensus\Tutorial Files** folder.

 *The contents of the file are displayed in a new window for verification.*

- Click **Next >** to advance to the **Main Options** page.

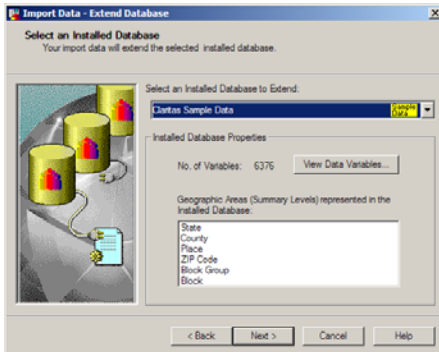


- Check **Extend an installed Database**.
- Check **Create Segmentation Profiles**.
- Click **Next >**.

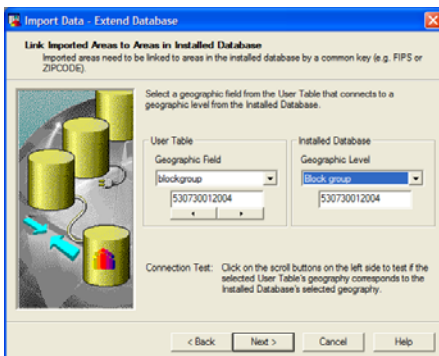
You must now select the installed PCensus database that will be extended with your imported data. Your data will be appended as a new category.

Using Segmentation Data for Customer Analysis




The PCensus database must contain a summary level that corresponds to the linking key in your input data. (Block group in this example.)



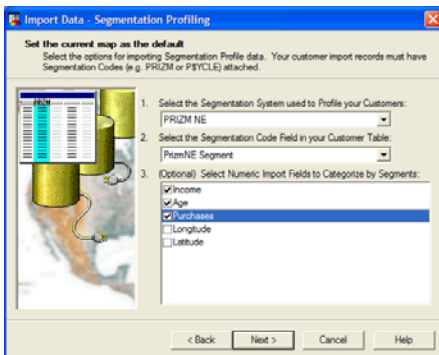
- Select the database **Claritas Sample Data**.
- Click  to continue.

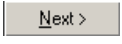


- Make sure that **blockgroup** in the **User Table** selector matches **Block Group** in the **Installed Database**.

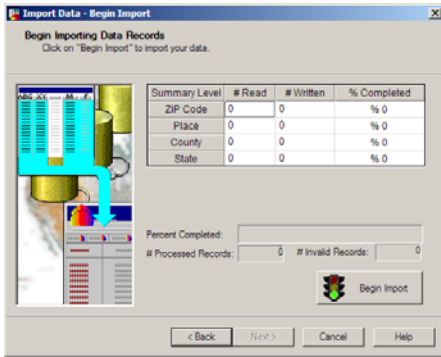
 *The keys beneath the selectors give an indication of how well the keys match. The two files should track each other when the  and  buttons are used to scan through the respective files.*

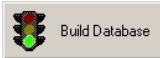

- Click  twice to advance to the **Segmentation Profiling** page.



- Select **PRIZM NE** as the segmentation system to be used.
- Select **PRIZM Segment** as the segmentation code field in the imported data.
- Click  twice to advance to the **Begin Import** page.

PCensus User's Guide



- Click  to complete the import operation.
- Click  in the following dialogs to complete the import process and create a project using the imported data.

Using the Extended Database

? By Default, PCensus creates a new project using the database we created. The project contains a predefined study area comprising all the Block Groups that contain at least one customer. This study area is automatically saved as a Reference Area (see page 145).

- Create a new study area, for example a ZIP code in Bellingham.

Study Area:	98226 Bellingham	Database:	Claritas Sample Data with Whatcom Data
Benchmark:	-- No Benchmark Selected --	Template:	Claritas Sample Data with Whatcom Data
<div style="display: flex; justify-content: space-between;"> Map Profile Target Profile Graph Target Graph Executive Summary Map Layout </div>			
Imported Values	Whatcom (Import Base Area)	98226 Bellingham	
Import record count	686	%	98
Top 5 PrizmNE Segment	Imported 47 City Startups Imported 33 Big Sky Families Imported 23 Greenbelt Sports Imported 37 Mayberry-ville Imported 44 New Beginnings		Imported 23 Greenbelt Sports Imported 33 Big Sky Families Imported 44 New Beginnings Imported 09 Big Fish Small Pond Imported 03 Movers & Shakers
Top 5 PrizmNE Segment: Income	34 White Picket Fences 24 Up-and-Comers 48 Young & Rustic 10 Second City Elite 38 Simple Pleasures		24 Up-and-Comers 45 Blue Highways 34 White Picket Fences 10 Second City Elite 38 Simple Pleasures
Top 5 PrizmNE Segment: Age	34 White Picket Fences 48 Young & Rustic 24 Up-and-Comers 38 Simple Pleasures 52 Suburban Pioneers		24 Up-and-Comers 34 White Picket Fences 45 Blue Highways 38 Simple Pleasures 04 Young Digerati
Category 1 of 87			

Using Segmentation Data for Customer Analysis

- Select the second category in the template to display penetration and Market Potential index (MPI) calculations.

Study Area: 98226 Bellingham		Database: Claritas Sample Data with Whatcom Data		Sample Data						
Benchmark: Whatcom (Import Base Area)		Template: Claritas Sample Data with Whatcom Data		Sample Data						
Map		Profile		Target						
Profile Graph		Target Graph		Executive Summary						
Map Layout		Map Tables								
Imported Values		98226 Bellingham								
PRIZM NE Segmentation		Client Count	Client Comp.	Base Count	Base Comp.	Study Area Count	Study Area Comp.	Base Penetration	Segment Index for Base Area	Contribution to MPI
Total		98	100.00%	71,394	100.00%	13,631	100.00%	0.96%	100	90.92
01 Upper Crust		0	0.00%	696	0.97%	292	2.14%	1.01%	105	2.24
02 Blue Blood Estates		0	0.00%	382	0.54%	219	1.61%	0.00%	0	0.00
03 Movers & Shakers		7	7.14%	918	1.29%	291	2.13%	0.76%	79	1.69
04 Young Digerati		0	0.00%	0	0.00%	0	0.00%	0.00%	0	0.00
05 Country Squires		0	0.00%	751	1.05%	306	2.24%	0.00%	0	0.00
06 Winner's Circle		0	0.00%	325	0.46%	166	1.22%	0.00%	0	0.00
07 Money & Brains		0	0.00%	0	0.00%	0	0.00%	0.00%	0	0.00
08 Executive Suites		0	0.00%	270	0.38%	160	1.17%	0.00%	0	0.00
09 Big Fish Small Pond		7	7.14%	2,230	3.12%	315	2.31%	1.26%	131	3.02
10 Second City Elite		0	0.00%	737	1.03%	25	0.18%	0.95%	99	0.18
11 God's Country		0	0.00%	1,319	1.85%	206	1.51%	1.06%	110	1.67
12 Brits Lites L'Il City		0	0.00%	916	1.28%	147	1.08%	0.76%	80	0.86
13 Upward Bound		0	0.00%	375	0.53%	39	0.29%	0.00%	0	0.00
14 New Empty Nests		0	0.00%	286	0.40%	82	0.60%	0.00%	0	0.00
15 Pools & Patios		0	0.00%	530	0.74%	106	0.78%	0.00%	0	0.00
16 Bohemian Mix		0	0.00%	0	0.00%	0	0.00%	0.00%	0	0.00
17 Beltway Boomers		0	0.00%	331	0.46%	144	1.06%	0.00%	0	0.00
18 Kids & Cul-de-Sacs		0	0.00%	459	0.64%	212	1.56%	0.00%	0	0.00
19 Home Sweet Home		0	0.00%	486	0.68%	18	0.13%	0.00%	0	0.00
20 Fast-Track Families		0	0.00%	1,716	2.40%	352	2.58%	0.82%	85	2.19
21 Gray Power		0	0.00%	545	0.76%	131	0.96%	0.00%	0	0.00
22 Young Influentials		0	0.00%	291	0.41%	74	0.54%	0.00%	0	0.00
23 Greenbelt Sports		21	21.43%	1,638	2.29%	437	3.21%	2.99%	311	9.98
24 Up-and-Comers		0	0.00%	521	0.73%	24	0.18%	0.00%	0	0.00
25 Country Casuals		0	0.00%	1,419	1.99%	316	2.32%	0.49%	51	1.19
26 The Cosmopolitans		0	0.00%	0	0.00%	0	0.00%	0.00%	0	0.00
27 Middleburg Managers		0	0.00%	846	1.18%	32	0.23%	0.00%	0	0.00
28 Traditional Times		0	0.00%	2,425	3.40%	357	2.62%	0.87%	90	2.36
29 American Dreams		0	0.00%	0	0.00%	0	0.00%	0.00%	0	0.00
Category 2 of 87										

In this category, we compute penetration ratios for each segment based on our imported data. These ratios are computed for a selected “Base Population”, and can be extrapolated to other market areas, on the assumption that populations in a given segment will behave similarly in any location.

The PCensus “Benchmark” feature is used to define the Base Population used in the calculations. Thus, by changing the selected benchmark, we can immediately see the result of using a different base for our calculations. The “Import Base Area” reference area created during the import process (all block groups containing one or more customers) is an obvious candidate for a base population, but other areas, such as the entire United States or a specific geographic area could be considered, depending on the scope and distribution of the imported data.

Note: The selection of a suitable base is of critical importance to the creation of a useful analysis. You are strongly recommended to consult with your PCensus data provider before using these techniques for predictive analysis.

PCensus User's Guide

The report column contents are defined using the following formulae (using segment **03 Movers and Shakers** as an example):

Column	Description	Formula
Client Count	Total number of actual customers for this segment in the study area	IMPORT_PRIZMNE_HH_CY_03
Client Composition	Percentage of actual customers in the study area that are in this segment	IMPORT_PRIZMNE_HH_CY_03/IMPCOUNT*100
Base Count	Total number of actual customers for this segment in the base area (currently selected benchmark area)	Benchmark.PRIZMNE_HH_CY_03
Base Composition	Percentage of actual customers in the base area that are in this segment	Benchmark.PRIZMNE_HH_CY_03/Benchmark.CY_HH*100
Study Area Count	Total number of households for this segment in the study area	PRIZMNE_HH_CY_03
Study Area Composition	Percentage of total households in the study area that are in this segment	PRIZMNE_HH_CY_03/CY_HH*100
Base Penetration	Ratio of actual customers to total households in the base area that are in this segment	Benchmark.IMPORT_PRIZMNE_HH_CY_03/Benchmark.PRIZMNE_HH_CY_03*100
Segment Index for Base Area	Ratio of Sample composition to Household composition for the base area for this segment	Benchmark.IMPORT_PRIZMNE_HH_CY_03/Benchmark.PRIZMNE_HH_CY_03/Benchmark.IMPCOUNT/Benchmark.CY_HH*100
Contribution to MPI	Percentage of households for segment in study area multiplied by segment index for base area	PRIZMNE_HH_CY_03/CY_HH* Benchmark.IMPORT_PRIZMNE_HH_CY_03/Benchmark.PRIZMNE_HH_CY_03/Benchmark.IMPCOUNT/Benchmark.CY_HH*100

 Note the extensive use of the “benchmark operator” in the formulae (See page158.)

Using Segmentation Data for Customer Analysis

The individual **Contribution to MPI** results can be totaled to give the overall Market Potential Index for any study area (displayed in the Total line of the profile):

Imported Values PRIZM NE Segmentation	98226 Bellingham									
	Client Count	Client Comp.	Base Count	Base Comp.	Study Area Count	Study Area Comp.	Base Penetration	Segment Index for Base Area	Contribution to MPI	
Total	98	100.00%	71,394	100.00%	13,631	100.00%	0.96%	10	90.92	
01 Upper Crust	0	0.00%	696	0.97%	292	2.14%	1.01%	105	2.24	
02 Blue Blood Estates	0	0.00%	382	0.54%	219	1.61%	0.00%	0	0.00	
03 Movers & Shakers	7	7.14%	918	1.29%	291	2.13%	0.76%	79	1.69	
04 Young Digerati	0	0.00%	0	0.00%	0	0.00%	0.00%	0	0.00	
05 Country Squires	0	0.00%	751	1.05%	306	2.24%	0.00%	0	0.00	
06 Winner's Circle	0	0.00%	325	0.46%	166	1.22%	0.00%	0	0.00	

The methodology used to calculate MPI will apply to any study area or target area, even in areas geographically remote from the area represented by the imported data. The MPI formula can be “pasted” into a lifestyle dimension, allowing us to compare the relative potential of new markets.

Rank	Washington County List	Market Potential Index
11	Grant County, WA	157
12	Spokane County, WA	156
13	Stevens County, WA	151
14	Grays Harbor County, WA	149
15	Columbia County, WA	147
16	Thurston County, WA	146
17	Wahkiakum County, WA	145
18	Kitsap County, WA	144
19	Lewis County, WA	143
20	Mason County, WA	140
21	Cowlitz County, WA	139
22	Klickitat County, WA	136
23	Benton County, WA	126
24	San Juan County, WA	126
25	Walla Walla County, WA	120
26	Pierce County, WA	120
27	Jefferson County, WA	112
28	Clallam County, WA	112
29	Clark County, WA	110
30	Pacific County, WA	99
31	Snohomish County, WA	95
32	Pend Oreille County, WA	94
33	Asotin County, WA	93
34	Douglas County, WA	91
35	Garfield County, WA	89
36	Lincoln County, WA	88
37	Okanogan County, WA	83
38	Ferry County, WA	73
39	King County, WA	54
Accepted	39 Targets	0
Rejected	0 Targets	0
Total	39 Targets	64

Search Target List

46 Penetration Analysis – a CRM Tool

Objective

Use a combination of the tools provided by PCensus to implement a CRM solution to identify and target your best customers. Predict the penetration ratio of a product or service in a market area, and then apply the results to locate new, successful markets.

Background

Customer Relationship Management (CRM) is an information industry term for methodologies and software that assist you to manage customer relationships in an organized way. For example, you might build a database of customer information (perhaps based on exit surveys or customer loyalty programs). This resource can be used by your management and front-line service providers to match product plans, offerings and service locations with customer needs.

The intention of this chapter is to suggest ways that the various capabilities of PCensus can be combined to assess the performance of your business in the contexts of customer data and demographics, and to locate new areas of opportunity.

In particular, we will refer to techniques such as:

- Lifestyle Targeting (page 85)
- Combining your data with PCensus Data (page 191)
- Editing a report Template (page 147)
- Indexing Profile Columns (page 144)

Methodology

To illustrate the concepts of Penetration Analysis, we have provided an “extended” database created by combining customer survey data (entirely fictitious) for a commodity called “Widgets” with our Claritas Sample Data.

We will see how PCensus can show us the areas where Widget usage is likely to be greatest, and how to identify the demographic factors that might control these usage patterns. We can then use these factors to search for new widget markets.

PCensus User's Guide

The **Widget Survey** consisted of a questionnaire circulated to households in Bellingham, with the single question: “**Does your household use Widgets?**”

The following steps were used to attach the survey data to the PCensus database.

- The results of the survey were recorded in an Excel worksheet containing the addresses of the respondents. A table column called “Widgets” was set to “1” if the answer was “Yes” and to “0” if it was “No”.
- The worksheet was geocoded to add a new column containing the block group FIPS code corresponding to the location of each household.
- The data were attached to the Claritas Sample Database as described in “Appending Your Data to a PCensus Database” (page 191).

The resulting “**Widget Survey**” category contains two variables:

- Total Households surveyed
- Surveyed Households owning Widgets

The data template was then edited (page 147) to create some additional data items in the same category:

Widget Survey		Whatcom County, WA	
Total households surveyed	686		%
Surveyed households owning Widgets	258		
Percent Penetration	38%		
Total Households	71,394	% base	
Predicted Widget Households	26,851	38%	
Average household income	\$ 59,190		
Median Age	35.52		
Population	183,747	% base	
Dominant Age	Age 25 to 34	20%	
Total Households	71,394	% base	
Top 5 PRIZM NE Segments	47 City Startups	6%	
	33 Big Sky Families	4%	
	44 New Beginnings	4%	
	37 Mayberry-ville	4%	
	43 Heartlanders	3%	

Percent Penetration: ratio of Widget owners to total surveyed households, as a percentage.

Total Households

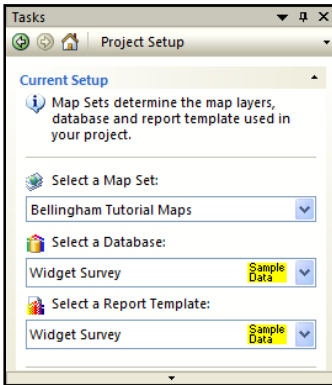
Predicted Widget Households: total households multiplied by penetration ratio.

Average Household Income

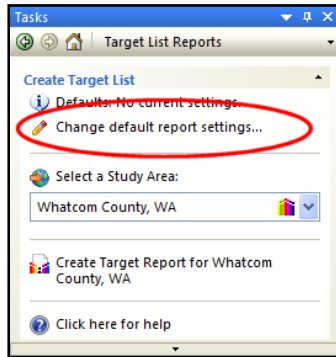
Median Age

Top 5 PRIZM Segments

Steps in Penetration Analysis

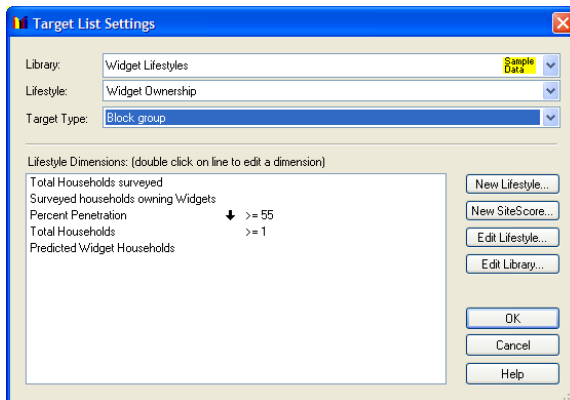


- Set up a new PCensus project using the **Widget Survey** database.
- In the **Predefined study area** task pane, define a study area for **Whatcom County**.



- In the **Target List Reports** task pane, select **Change default report settings**.

? *We have already created a suitable lifestyle for the project, containing dimensions based on the survey data.*



- Select **Block Group** as the **Target Type**.
- Click **OK**.
- Click **Create Target Report for Whatcom County, WA** in the task pane.

PCensus User's Guide

Rank	Whatcom County, WA Block group List	Total Households surveyed	Surveyed households owning Widgets	Percent Penetration ↓	Total Households	Predicted Widget Households	
1	530730104016	7	7	100%	381	381	
2	530730008022	7	7	100%	2,078	2,078	
3	530730107001	7	7	100%	549	549	
4	530730103011	7	6	86%	630	540	
5	530730008014	7	6	86%	2,103	1,803	
6	530730104021	7	6	86%	1,177	1,009	
7	530730104023	7	6	86%	432	370	
8	530730011002	7	6	86%	594	509	
9	530730008023	7	6	86%	449	385	
10	530730008015	7	6	86%	803	688	
11	530730012003	7	6	86%	525	450	
12	530730011003	7	6	86%	1,336	1,145	
13	530730106004	7	6	86%	202	173	
14	530730107003	7	6	86%	696	597	
15	530730110002	7	6	86%	146	125	
16	530730008013	7	5	71%	830	593	
17	530730009003	7	5	71%	910	650	
18	530730009002	7	5	71%	2,083	1,488	
High Widget Use		28 Targets	196	149	76	21,688	16,487
Low Widget Use		71 Targets	490	109	22	49,706	11,057
Total		99 Targets	686	258	38	71,394	26,851

The lifestyle has a **Filter** that rejects any block groups where the **Percent Penetration** is less than **55%**. Twenty-eight targets are displayed in the list.

➤ Select the **Profile** tab.

Widget Survey	Whatcom County, WA		Whatcom County, WA (Profile of High Widget Use)		Whatcom County, WA (Profile of Low Widget Use)	
		%		%		%
Total households surveyed	686		196		490	
Surveyed households owning Widgets	258		149		109	
Percent Penetration	38%		76%		22%	
Total Households	71,394	% base	21,688	% base	49,706	% base
Predicted Widget Households	26,851	38%	16,487	76%	11,057	22%
Average household income	\$ 59,190		\$ 71,526		\$ 53,808	
Median Age	35.52		39.36		33.94	
Population	183,747	% base	56,052	% base	127,695	% base
Dominant Age	Age 25 to 34	20%	Age 35 to 44	19%	Age 25 to 34	21%
Total Households	71,394	% base	21,688	% base	49,706	% base
Top 5 PRIZM NE Segments	47 City Startups	6%	09 Big Fish, Small Po...	6%	47 City Startups	8%
	33 Big Sky Families	4%	33 Big Sky Families	5%	37 Mayberry-ville	4%
	44 New Beginnings	4%	11 God's Country	5%	53 Mobility Blues	4%
	37 Mayberry-ville	4%	44 New Beginnings	4%	57 Old Milltowns	4%
	43 Heartlanders	3%	51 Shotguns & Picku...	4%	44 New Beginnings	4%

The Profile contains 3 columns:

- The totals for **Whatcom County**.
- The totals for all targets that passed the filter (**High Widget Use**).
- The totals for all targets that were rejected by the filter (**Low Widget Use**).

🔗 See page 164 for a description of the accepted/rejected feature.

To emphasize these differences, click in the **Whatcom County** column header, and select **Use as Benchmark** from the menu.

Widget Survey				Whatcom County, WA				Whatcom County, WA (Profile of High Widget Use)				Whatcom County, WA (Profile of Low Widget Use)			
		%	Index		%	Index		%	Index		%	Index		%	Index
Total households surveyed	686		100	196		28	490		71						
Surveyed households owning Widgets	258		100	149		57	109		42						
Percent Penetration	38%		100	76%		202	22%		59						
Total Households	71,394	% base	100	21,688	% base	30	49,706	% base	69						
Predicted Widget Households	26,851	38%	100	16,487	76%	61	11,057	22%	41						
Average household income	\$ 59,190		100	\$ 71,526		120	\$ 53,808		90						
Median Age	35.52		100	39.36		110	33.94		95						
Population	183,747	% base	100	56,052	% base	30	127,695	% base	69						
Dominant Age	Age 25 to 34	20%		Age 35 to 44	19%		Age 25 to 34	21%							
Total Households	71,394	% base	100	21,688	% base	30	49,706	% base	69						
Top 5 PRIZM NE Segments	47 City Startups	6%		09 Big Fish, Small Po...	6%		47 City Startups	8%							
	33 Big Sky Families	4%		33 Big Sky Families	5%		37 Mayberry-ville	4%							
	44 New Beginnings	4%		11 God's Country	5%		53 Mobility Blues	4%							
	37 Mayberry-ville	4%		44 New Beginnings	4%		57 Old Milltowns	4%							
	43 Heartlanders	3%		51 Shotgun & Picku...	4%		44 New Beginnings	4%							

We can see some distinct differences between the demographics of the **High Widget Usage** and **Low Widget Usage** groups:

- Average incomes are high (Index **133**) in the **High Widget Usage** areas, and lower (Index **85**) in the **Low Widget Usage** areas.
- Median Age is **38** years in the **High Widget Usage** areas and **33** in the **Low Widget Usage** areas.
- The **PRIZM** segment assignments are different between the two areas.

The database was created artificially in order to emphasize the techniques and results shown in the tutorial. Obviously, the use of real world data would require more subtle interpretation than the simple results shown here.

We can expect that inspection of the other categories in the template would show similar differences between the two populations, for example in education attainment or occupation.

Finding New Markets

We have seen how the combination of Lifestyle Targeting and Profile Indexing can show the demographic differences between areas with high and low penetration of our fictional Widget product.

The next step is to use this knowledge to help us find new areas that are similar in their demographic make-up to the high Widget-usage areas

PCensus User's Guide

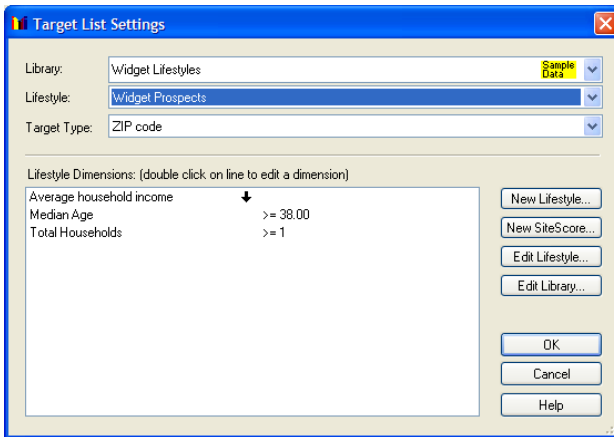
identified by our survey. These new areas will be the focus of our next Widget marketing campaign.

It appears that Widget acceptance may be correlated to these factors:

- Higher median age (**38** years for **High** Widget use versus **32** years for **Low**).
- Higher average income (**\$74,866** versus **\$47,983**)

We can use Lifestyle Targeting to find other areas that match these demographic criteria; the target areas found will define our prospective market.

In the following example, we will find the most favorable Whatcom County ZIP codes for Widget acceptance.



- Create a new study area for **Whatcom County**.
- In the Default Report Settings dialog, select the **Widget Prospects** lifestyle.
- Set the **Target Type** to **ZIP Code**.

The **Widget Prospects** lifestyle is designed to help us find areas where the demographics match our criteria.

The dimension **Median Age** has a minimum filter of **38**, so only ZIP codes where the median age is greater or equal to this value will be accepted.

We have specified **Average Income** as the ranking dimension, so high income areas will be listed first.

➤ Create the Target Report.

Rank	Whatcom County, WA ZIP code List	Average household income ↓	Median Age	Total Households
1	98240 Custer	\$ 74,357	38.65	1,031
2	98262 Lummi Island	\$ 73,672	49.62	433
3	98230 Blaine	\$ 65,278	41.18	5,082
4	98244 Deming	\$ 62,399	39.83	894
5	98220 Acme	\$ 56,929	38.42	162
6	98281 Point Roberts	\$ 56,421	46.20	656
Accepted	6 Targets	\$ 65,673	41.49	8,258
Rejected	9 Targets	\$ 57,959	34.75	62,400
Total	15 Targets	\$ 58,860	35.51	70,658

Search Target List

Only six of the 15 ZIP codes passed the filter.

These ZIP codes will be the focus of our Widget marketing campaign.

What Can I Do Now?

The techniques shown here can also be extended to use user defined target areas (page 229). In this case, we could compare the penetration ratios in the trading areas of any numbers of business locations.

Appendix 1 – Database Management


Installing PCensus Databases


Databases are normally delivered on CDs. Exact installation methods may vary, so please follow the instructions printed on the CD or in accompanying documentation.

In most cases, databases are installed by running a **Setup** program supplied on the CD.

To install databases:

- Make sure that PCensus has been properly installed on your computer.
- If PCensus is currently running, close it before continuing.
- Insert the PCensus Database CD in your drive.
- Click the Windows Start button and select Run... .
- Type D:Setup.

 *If your CD-ROM drive is not "D:", substitute the appropriate letter.*

- Click  and follow the instructions displayed by the installation program.

Registering Databases for Use on a Network

PCensus databases can be installed on a network server and shared by multiple users; however, before doing this, you should contact Tetrad for information regarding licensing requirements.

The database registration function allows PCensus to find database files that were installed from another workstation. It can also be used to allow access to files that have been installed in a nonstandard way, for example by moving or copying them from one directory to another.

When you install databases they are automatically registered on the local computer.

Each workstation must have its own installed copy of PCensus in a local folder. This is necessary for practicality, and to satisfy the requirements of the PCensus license.




PCensus User's Guide

Before a database can be registered, it must be installed on the server. This may be done from any PCensus workstation, using the installation method described above.

To register a previously installed database:

- Select Database Management from the Tools menu.

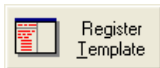


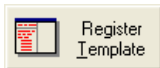
- Click  in the Database Management dialog box.
 - Specify the database to be registered. This will be a file with the extension ".hdr".
- Click  to locate the required file and click .

PCensus may prompt you to locate additional files to complete the installation. The files have the extensions ".tpl", ".ddy" and ".ico"; they will probably be in the PCensus folder where the database was originally installed, or on the CD-ROM on which the database was supplied.

Registering Data Templates

On occasion, it may be necessary to install additional data templates, for example to use a custom template created by another user. In order for a template to be displayed in the PCensus **Data Template Selector**, it must be “registered”.



- Click  in the Database Management dialog box.
- Select the template file to be registered. Template files have the extension ".tpl".

If the selected template is on a CD-ROM or other removable medium, it will be copied to the correct location on your hard disk.


When attempting to register a template, you may see an error message regarding missing files. This means that no databases of the type supported by the template have been installed. Install a suitable database and retry the operation.

Deleting Databases

From time to time, you may want to remove PCensus databases and other files from your hard disk. This is often desirable when files such as annually updated **Estimate and Projection** databases are made obsolete by the next year's release.

Databases typically consist of numerous files, the names of which are not obvious, so it is not recommended to delete them using Explorer or similar Windows utilities. Furthermore, manual deletion of registered files can cause operational problems.



PCensus provides a method for safe deletion of unwanted files.

 *If you are using PCensus on a network, remember that deleting databases or templates will also make them unavailable to other users.*

To delete files,

- Click the  icon in the Database Management dialog box.

PCensus displays the **Delete Files** dialog box.


- Select the type of file to delete (Database, Template or Lifestyle Library).
- Select the correct file from the pull-down list.
- Click the  button.
- Click  when finished.

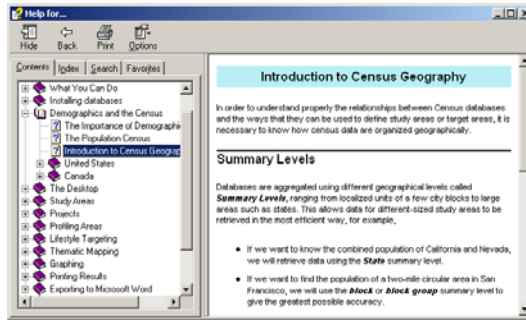
If you delete a file accidentally, you must reload it from the original CD-ROM.

You are advised not to delete the databases or templates that were used to create saved projects that you intend to restore in the future.

Appendix 2 – Census Geography

In order to understand properly the relationships between PCensus databases and the study areas used in PCensus, it is necessary to know how census data are organized geographically. This Appendix provides information specific to the geographical hierarchy used by PCensus databases for the United States.

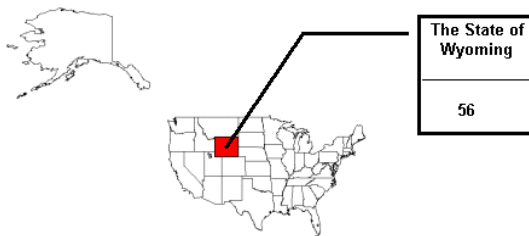
More detailed information on Census Geography can be found in the PCensus online Help. (Click  in the PCensus toolbar).



The information in PCensus databases is aggregated into **summary levels**, each representing a type of geographical area (e.g. state or county) for which census variables are totaled.

Summary levels representing large areas like states are considered to be at a higher level in the hierarchy than smaller areas such as census tracts or block groups. This section describes the available summary level types.

States



The United States contains **States**.

There are 51 states, including the District of Columbia.

Each state is assigned a two-digit Federal Information Processing Standards (FIPS) code. The FIPS codes follow the alphabetical sequence of the states.

Counties



States contain **Counties**.

A county is a primary and political subdivision of a state (known as a borough or a parish in some states). A five digit FIPS code (two digit state plus three digit county code) identifies each county uniquely within each state.

There are 3,141 Counties in the United States.

Census Tracts



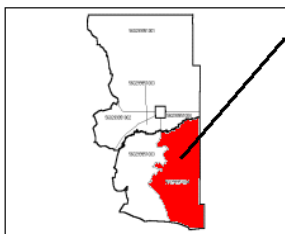
Counties contain **Census Tracts (CTs)**.

A census tract is a subdivision of a county designed to be relatively homogenous with respect to population characteristics, economic status and living conditions. Census tracts are designed to provide continuity between censuses, but under some circumstances they may be split or merged.

There are 65,443 census tracts in the 2000 Census. Tracts generally contain about 850-2,000 households.

Tract numbers are unique within each county. Tracts are identified by state/county FIPS code plus a four digit code and a two digit extension. The extension is usually displayed with a “decimal point” (e.g. 560299951.00).

Block Groups (BGs)



A block group in tract 9951.00
560299951.004

Census Tracts contain **Block Groups (BGs)**.

A block group is a subdivision of a census tract.

There are 208,790 block groups in the 2000 Census. Block groups generally contain about 250-550 households.

Block group numbers are unique within each census tract. Block groups are identified by state/county/tract FIPS code plus a one digit code.

Blocks




A block from block group 4
560299951.004833

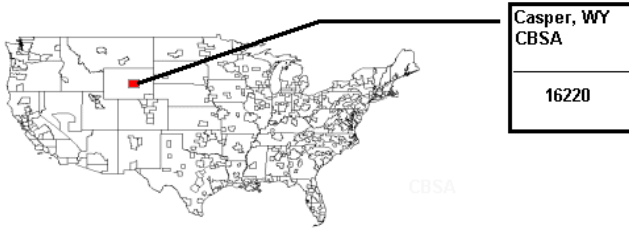
Block Groups contain **Blocks**.

Blocks are the smallest available geographical unit.

Block numbers are unique within block groups. Blocks are identified by state/county/tract/blockgroup FIPS code plus a three digit block code.

 No detailed demographic information is available at the block level; PCensus uses a method called *Block Prorating* (see page 263) to compute estimated values.

Core Based Statistical Areas (CBSAs)



Core Based Statistical Areas (CBSAs) correspond to major cities.

CBSAs are cities. They follow political boundaries that may change over time and are updated on an annual basis. CBSAs were introduced in 2004, and will eventually replace the obsolete MSAs (see below).

Each CBSA consists of one or more counties, and must meet specified standards pertaining to population, commuting ties, and metropolitan character. CBSAs can cross state boundaries.

Two types of CBSA are recognized, Metropolitan and Micropolitan.

- Metropolitan Statistical Area - have an urban core with a population of 50,000 or more
- Micropolitan Statistical Area - have an urban core with a population of at least 10,000 but less than 50,000

PCensus does not distinguish between the two types of CBSAs. However, variables are provided that tabulate population in metropolitan areas and micropolitan areas, so it is possible to distinguish the two types by setting appropriate filters in a target list. The metropolitan and micropolitan totals are displayed in the “Table of contents” category for databases that include the CBSA geography.

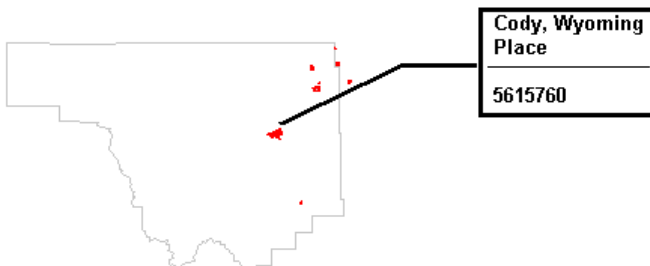
Appendix 2 – Census Geography

OMNIBUS Geographic Summary and Table of Contents	The United States	Louisville-Jefferson County, KY-IN Metropolitan Statistical Area	Adrian, MI Micropolitan Statistical Area
2008 OMNIBUS Database			
Geographic Summary			
Current Year Estimates			
Total Population	304,141,549	1,237,066	102,743
Metropolitan	83%	100%	0%
Micropolitan	10%	0%	100%
Total Households	114,694,201	502,228	38,126
Metropolitan	83%	100%	0%
Micropolitan	10%	0%	100%
Predominant CBSA Type	Metropolitan	Metropolitan	Micropolitan
Land area, square miles	3,537,438.444	4,135.413	750.502
Target type used for study area	National	Core Based Sta...	Core Based Sta...
Number of targets retrieved	1	1	1

? When CBSAs are used as a Target type, the resulting profile may contain incomplete totals, as rural areas within the study area will not be included.

There are 922 CBSAs. Each CBSA is assigned a unique five digit CBSA Code.

Places



Places correspond to locally known place names.

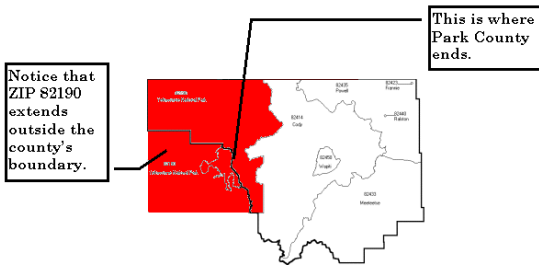
Places are areas that are known locally and may or may not be officially incorporated. They may be cities, towns, villages or “census designated places” (CDPs).

Places can cross any other boundary types, but usually respect state boundaries.

? When Places are used as a Target type, the resulting profile may contain incomplete totals, as population in rural areas within the study area will not be included.

There are 25,150 places in the 2000 Census. Each place is assigned a unique seven digit code consisting of the State FIPS code and a five digit place code.

ZIP Codes



ZIP codes represent postal delivery areas.

The U.S. Postal Service employs its own geographical methodology for the distribution of mail across the United States. ZIP code boundaries were created solely to deliver the mail. Because ZIP codes are designed for efficient delivery of mail, they generally do not follow political or census area boundaries.

? *ZIP code boundaries may cross state lines.*

There are approximately 42,000 ZIP codes in the United States. They may contain from zero to 100,000 households.

? *ZIP code boundaries and populations change constantly and are updated on an annual basis. The ZIP Roster includes all residential ZIPs and approximately 5,100 post offices that serve residential customers through post office boxes. Non-residential P.O. Box ZIP codes, business ZIP codes, and other non-residential ZIP codes may be included in the roster, but they usually have no associated data.*

Appendix 3 – Block Prorating


PCensus uses a method called **Block Prorating** to enhance precision when searching circle, polygon or drive time study areas.

In most databases, the smallest geographical unit for which detailed data are available is the Block Group (BG) in the United States or Dissemination Area (DA) in Canada. In both cases, the areas covered by these units may be quite large, especially in relatively sparsely populated regions, and the “edge-effects” resulting when a study area boundary cuts them can cause significant uncertainty in the study area results.

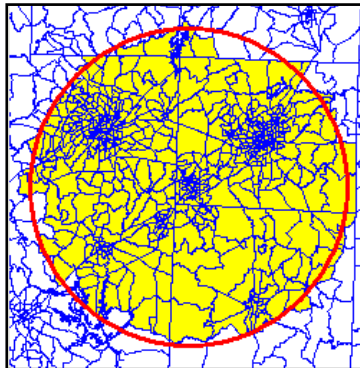
The Block Prorating method distributes the data for each block group or dissemination area between its constituent census blocks on the basis of population, household count or other factors. The smaller size and larger number of blocks allows a substantial improvement in precision.

The Effect of Study Area Size on Precision

When PCensus searches a polygon or circle, there is inevitably an “edge-effect” where targets may be only partially inside the study area. This effect can be minimized by using a target type that is small compared to the area being searched.

 *The following discussion describes U.S. block groups, but applies equally to Canadian Dissemination areas. In both cases, the availability of selected variables such as population or household counts at the block level allows the block prorating methodology to be applied.*

For example, consider this 25 mile radius circle:



25 Mile radius showing block groups included in study area.

Of the block group target areas shown,

PCensus User's Guide

- **566** block groups are fully contained within the circle
- **597** block groups have centroids within the circle
- **633** block groups intersect the circle

From this we can deduce that 67 block groups are cut by the circle boundary. Of these:

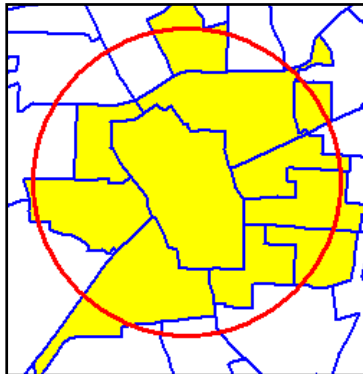
- **31** would be included in the study area.
- **36** would be excluded.

It is not usually possible to apportion the data for a target on the basis of the percentage of its area that falls in the study area; this would require the assumption that its population is evenly distributed, which is rarely the case.

However, we can assume that although data will be erroneously included for some targets and erroneously excluded for other targets, the effects will be random and will tend to balance out.

In the example above, only about 10% of the targets are affected by this uncertainty, so the results for the study area will be quite reliable.

For a one-mile radius, the situation is somewhat different.



One-mile radius showing block groups included in study area

We can see that the edge effects will be much more significant than for the 25 mile circle.

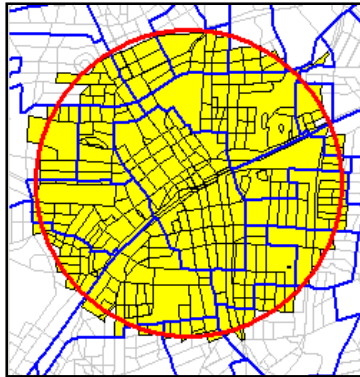
The examples above demonstrate that precision in searching mapped study areas is controlled by the relative sizes of the study area and the target areas stored in the database.

Enhanced Precision Using Blocks

The table below demonstrates the improvement in precision that can be achieved by searching at the block level.

Country	Basic Geographic Unit		Total Number of Blocks	Average improvement in Precision
	Name	Total Number		
United States	Block group	208,648	8,262,363	40 times
Canada	Dissemination Area	52,993	478,707	10 times

The following illustration shows the increased detail available using blocks (lighter outlines) compared to the block group boundaries shown above for the same area.



One-mile radius showing blocks included in study area

Methodology

For most databases, there are practical reasons why it is not feasible to store data at the block level:

- Although the Census data are available for basic demographics (for example, population and household counts) at the block level, most of the information of critical interest (for example, income data and derived products such as consumer spending) is only available at the block group or dissemination area levels.
- The combination of the increased number of targets and the thousands of variables available in most databases would require massive files which could not conveniently be distributed or stored using current personal computer technology.

PCensus User's Guide

The **Block Prorating** methodology provides a solution to these problems. It is a reasonable assumption that the demographics of the population in a block group are fairly homogeneous - in fact the block group boundaries were laid out with a conscious objective of ensuring that this is the case.

From the census, we know the population and some other basic information for every block, as well as for its enclosing block group. We can use the ratios of these populations as a basis for distributing most demographic data in a block group to its component blocks.

For an example, consider the following case:

- The population of a block is **50**.
- The population of the enclosing block group is **500**.
- The Asian population of the block group is **40**.

We can estimate the Asian population of the block by prorating on the basis of total population:

$$\frac{\text{Block Population}}{\text{BG Population}} \times \text{Asian BG Population} = \text{Asian Block Population}$$

$$\frac{50}{500} \times 40 = 4$$

This means that we need only to know the block-to-block group population ratio (in this case $50/500 = 0.1$) to estimate the value of any variable for a block.

Although we cannot be absolutely sure that the assumption of homogeneity is valid (all 40 Asians could live in the same block), for the most part we can assume that our estimate will be reliable. Furthermore, in the circular study area example above, most of the blocks will be re-aggregated into block groups, so our assumption will only need to be true for block groups that are split by the circle boundary.

We can therefore achieve block level precision by storing only the block/block group population ratio for each block in our database, instead of the full set of variables, allowing a huge reduction in the amount of storage space required. We can also create block level estimates for variables that are not normally available below the block group level.

In practice, the block prorating method has been refined by providing several block/block group factors, for example for number of housing units or for land area. For variables related to households (such as household income

Appendix 3 – Block Prorating

statistics) the ratio of households is used instead of the population ratio. The most appropriate factor is automatically used to prorate each variable in the database.

Appendix 4 - Creating a Map Set

Creating a Map Set

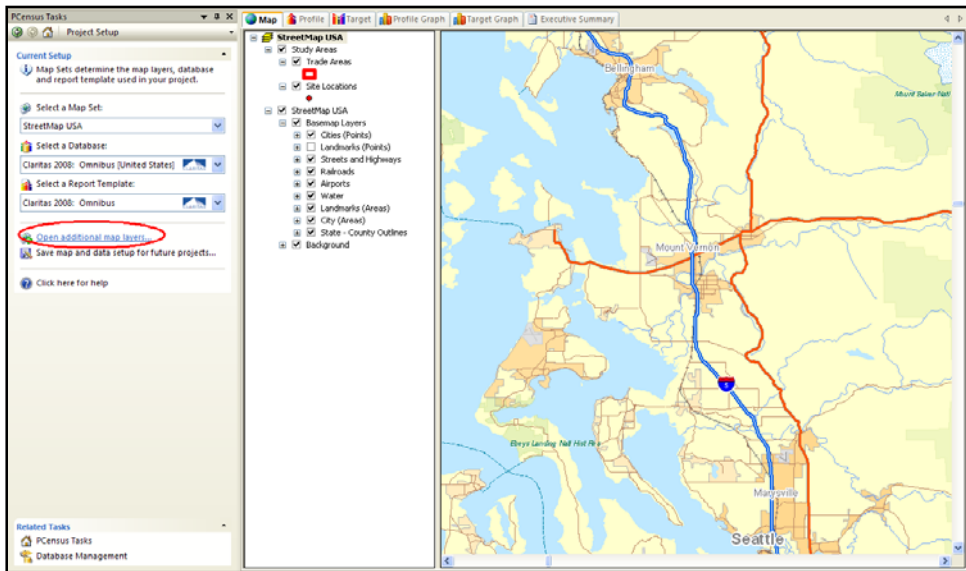
The following is a typical set of steps to create a Map Set that will define the environment for starting new projects.

Create a new Map View

- Display the **Project Setup** task pane.

If the currently displayed map does not contain the map layers you wish to use, select the entry “-- No Map Set Selected --” in the **Select a Map Set** list.

This will have the effect of removing any currently open map layers.



- Click **Open Additional Map Layers** to add content to the map.

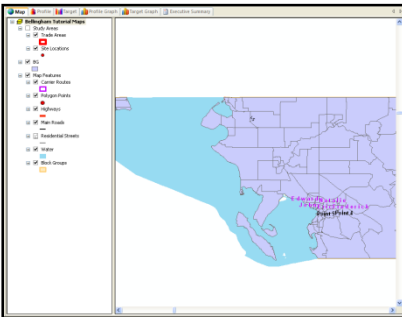
The **Open Map Layers** dialog allows you to open map files from:

- Individual layers (ArcView .shp, or .lyr files).
- ArcMap Documents (.mxd).
- Other PCensus map sets.

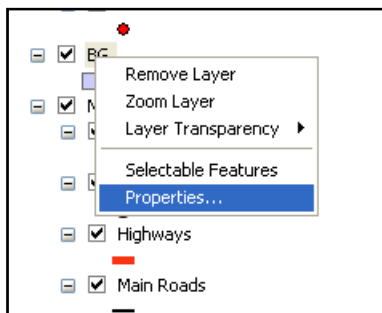
As an example, add the **BG.shp** layer located in the **Tutorial Files\Map Files\Bellingham** folder.

Adjust the Content and Appearance of the Map

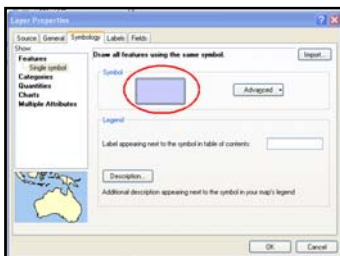
The steps that follow illustrate the use of the ArcView **Layer Control** to change the content and appearance of the map window.



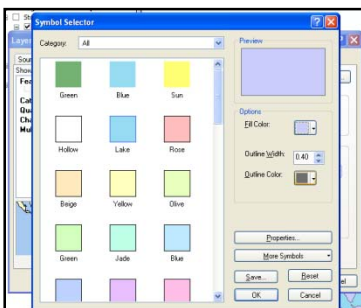
The block code boundaries are initially represented by filled, thin, black boundaries that cover the background of the base map. We may wish to change the appearance of these boundaries to make them and the other layers more visible



➤ To change the color and thickness of the lines, right-click on **BC** in the **Layer Control** Window and select **Properties**.

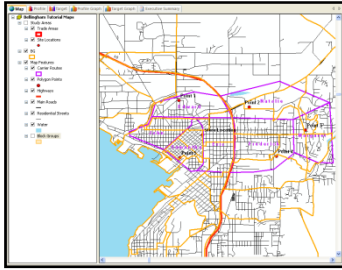


➤ Select the **Symbology** tab and click on the boundary representation




➤ Change the **Outline Width** to 2, **Outline Color** to orange and set the **Fill Color** to hollow (or no color).


➤ Select **OK** to see the resulting map.




- Exit the layer control system by clicking OK in successive dialog boxes to view the result.

Set the Default Map Location

Use the Map Navigation controls  to set the map window to the location of your area of interest. This could be a regional view encompassing several states, or a localized view of the city where a single operation is located.

 *If your business operates in several cities, you can create separate map sets for each of them.*

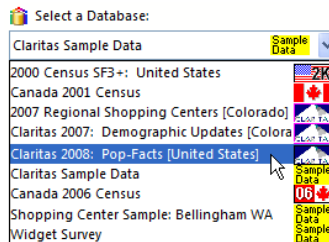
Set the Default Database and Template

 *Most PCensus installations will include more than one installed database (See next Chapter), one of which will be the Sample Database provided to illustrate the tutorials in this manual.*

In addition, you may have retained databases from previous years for reference purposes, or you may have installed separate databases for the U.S. and Canada.

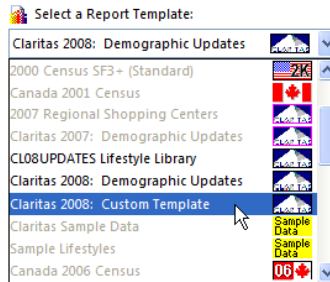
If you have several databases installed, it is probable that you will want to use the same one for most of your projects. To ensure that PCensus always starts new projects with the required database, select a default database and template.

- Select the required database from the pull-down list.



PCensus User's Guide

If you wish to use a customized data template for your reports, select it from the Report Template list.

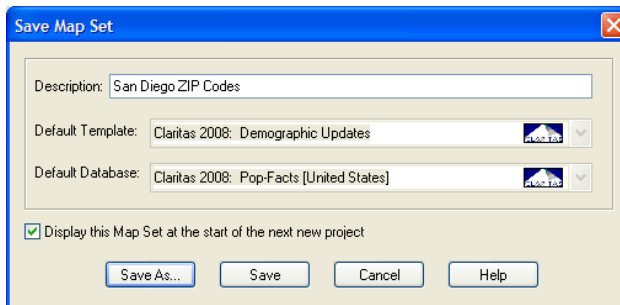


i Notice that templates that are not compatible with the current database cannot be selected.

Save the Map Set

When you have made the necessary selections,

➤ Select **Save map and data setup for future projects...**



➤ Type a description to appear in the list of defined map sets.

If required, check the box to **Display this map set at the start of the next new project**.

➤ Click the **Save As** button to save the map set.

i You can delete map sets by selecting *Database Management* from the *Tools* menu. Deleting a map set does not remove any of the map or database files to which it refers.