DATA INTEGRATION PROCEDURES IN SUPPORT OF STATEWIDE TRANSPORTATION MODELING AND PLANNING PROCESSES

Final Report: Executive Summary

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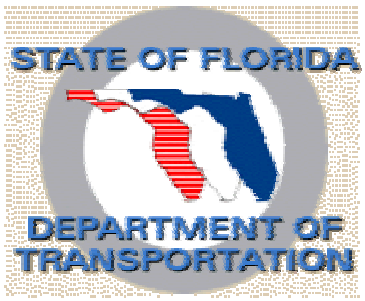

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Disclaimer

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Executive Summary

INTRODUCTION

Planning and modeling processes at the local, regional, and statewide levels in the State of Florida rely on a wide variety of data sources for their inputs. For example, the various FSUTMS models used in the state and the FIHS Support System utilize an array of input variables that describe the socio-economic, demographic, transportation network, intermodal facility, pavement condition, accident, traffic volume, environmental, and land use characteristics of a region. All of these data items are derived from a variety of different sources and then pulled together to perform the desired analysis or run the appropriate model. Due to the disparity in the format and level of aggregation of the various databases from which desired input variables can be derived, the task of developing an integrated database for modeling and planning purposes is extremely time-consuming and arduous. Keeping a modeling or planning database constantly updated is another major challenge as the data sources from which variables are derived are often updated in different years. In addition, as different agencies employ different data extraction and integration procedures, there are inconsistencies across databases utilized for planning in the state.

As the amount of data required to support planning and modeling processes in the state continues to increase and the number of data sources from which input variables need to be derived continues to rise, there is a need to develop a set of consistent data integration procedures that can support the modeling and planning processes in the state. These procedures would help state and local agencies in their planning efforts while ensuring consistency across databases and agencies.

STUDY OBJECTIVES

The specific objectives of the project were as follows:

1. To identify data items and data sources that are commonly used in the State of Florida for transportation planning and modeling
2. To develop data integration procedures that allow the extraction and integration of variables from a variety of sources, formats, and levels of aggregation
3. To provide a mechanism by which planning and modeling databases can be easily updated as key data sources (e.g., census) get updated.

METHODOLOGY

The Department proposed to develop and implement a comprehensive set of data integration procedures in support of modeling and planning processes in the State of Florida. The procedures would not only focus on the extraction and integration of data derived from a wide variety of disparate data sources, but also on the updating and verification of the databases over time. The project involved close coordination with several other ongoing research projects dealing with the integration of state-of-the-art methodologies into Florida's statewide model, the development of urban and statewide freight models, and the development of conflation (data or network matching) tools. This project also included an extensive effort to coordinate closely with MPOs, state agencies, Districts, the Turnpike District, and the agencies responsible for compiling the data sources from which input variables are derived.

This section provides an overall description of the tasks undertaken to accomplish the mission of the project. The project was divided into two main phases. The first phase focused on the development of data integration procedures while the second phase focused on the development of procedures for data updating and verification.

The first phase involved the development of data integration procedures that allowed the extraction of data items from a variety of data sources. Within this phase, the data items that are used for modeling and planning in the State of Florida were identified and the relevant data sources from which these items may be extracted were recognized. The major activities undertaken in the first phase are as follows:

Review of Current Practice: A comprehensive review of the state-of-the-practice in data integration was conducted. The review focused on methods for integrating and matching data

across disparate data sources that do not have the same format or level of aggregation. In addition, the research team communicated with District and MPO planning staff to find out current practice related to data integration and database compilation for all of the different types of transportation modeling and planning studies conducted by these agencies.

Identification of Data Needs and Issues: In coordination with District planning staff and MPO planning staff, the research team identified data needs for planning and modeling applications in the state. Meetings were held with staff from various agencies in order to help compile an exhaustive list of data requirements in the state. In addition to identifying data needs, issues related to the availability and preferred format of the data were also discussed. Data needs and issues were identified from the perspective of different users and applications. For example, data requirements for regional and local FSUTMS models were different from those for the statewide FSUTMS model. Similarly, the FIHS support system had unique data requirements. Thus the identification of data needs and issues was done in association with the type of application or use of the data.

Identification of Data Sources and Formats: Following the identification of data needs and issues, the research team focused on the identification of databases that serve as the best data sources for all of the variables used by planners and modelers in the state. For every variable or data item identified in the project, a suitable data source was identified. All of the attributes of the data sources have been compiled into the data integration procedures and programs developed in this project. For example, the attributes considered include, but are not necessarily limited to:

- Date of database
- Frequency of update
- Format
- Coding scheme
- Availability
- Cost
- Size of database
- Variables included in database
- Level of aggregation (spatial and temporal)
- Coverage

- Completeness
- Accuracy and precision levels
- Other

Development of a Data and Application Taxonomy: Prior to the development of data integration algorithms, the project team developed a data and application taxonomy or classification system. Such a system is needed because different algorithms have been developed for different types of data, modeling applications, and planning processes. For example, the types of data integration procedures that apply to transportation network data do not apply to socio-economic data (ZDATA). Similarly, the types of data integration procedures that apply to FSUTMS model development and application do not apply to the FIHS support system. Therefore, it was considered very important to develop a proper classification system which can be used to guide the development of data integration algorithms and procedures. In this way, a user can easily and conveniently use the right algorithm for the type of data and application that he or she is undertaking. This taxonomy was developed in collaboration with agency staff.

Development of Data Integration Algorithms: Appropriate data integration algorithms were developed according to the taxonomy developed in the project. The algorithms and procedures developed in this project include a vast array of capabilities and cover the full range of applications and data types relevant to modeling and planning needs in the State of Florida. These algorithms and their associated databases and networks are provided on a set of 9 CD's that accompany this report. The algorithms cover all data associated with the FIHS support system and FSUTMS models across the state. The data integration procedures contain appropriate data channelization methods in which a stream of data manipulations and adjustments are performed so that the data are extracted and integrated in a manner desired by planning and modeling applications in the state. The data integration procedures cover the entire process – from the source to final utilization. If the data are collected in the field (say, traffic counts), then the data integration algorithm works on the raw traffic count data that is collected in the field. It will run the data through a series of manipulations, adjustments, and transformations so that it is obtained in a form ready for final utilization. The algorithms operate on many possible sources of data including census, state and regional databases, FSUTMS data, FDOT RCI and TCI data, and FGDL data.

Development of Data Integration Tool Suite: All of the data integration algorithms and procedures developed in the project have been put together in the form of a computerized suite of tools that can be used by planners and modelers in the state. The suite of tools has been assembled in collaboration with agency staff who would constitute the end users of the product. Considering that most databases are now available in GIS format, the suite of tools has been developed so that a strong interface with ArcView is available for the user.

The second phase of the project focused on the development of procedures for regularly updating and verifying the data derived from different data sources. As data sources are periodically updated, the transportation planning and modeling databases should be periodically updated as well. Also, the data need to be verified periodically to ensure that they are correct, the best data available, and up-to-date. Following the completion of Phase I, the research team developed procedures and algorithms that can be used by planners and modelers for periodically updating and verifying their databases. The major activities undertaken in this phase include:

Protocols for Data Update and Verification: It was considered important to develop a set of protocols that will define the need for and the nature of the date update and verification process that a user would undertake. For example, if only one variable in a database of 100 variables has been found to be updated, is that justification to proceed with a database update procedure? If it is found that the level of accuracy of one variable in a database of 100 variables has been changed (in the source) by 0.01%, is that justification to proceed with a database verification and correction procedure? The research team worked closely with agency staff to develop a set of protocols that will help guide users with respect to the need for data update and verification. The protocols form a set of criteria against which users can check their data configuration and decide whether to proceed with a data update and verification procedure.

Development of Data Update and Verification Algorithms: Procedures and algorithms that allow users to check their databases for updates and consistency and verify that their databases reflect the most accurate information available were developed. The algorithms and procedures incorporate the protocols and criteria developed in this project so that users can

decide on the types of updates and consistency checks to which they would like to subject their databases.

Preparation of Computerized Suite of Tools: The procedures and algorithms developed in this project have been packaged into a suite of computerized tools that are interfaced with the ArcView GIS interface. The tools are available on a set of 9 CD's that accompany this report.

SAMPLE MODEL SYSTEM WITH BUILT-IN DATA INTEGRATION PROCEDURES AND UTILITIES

The Broward custom sample application has been developed by Caliper Corporation and the instructions and documentation provided in this Executive Summary have been prepared by Caliper Corporation under a subcontract to the University of South Florida. The custom application performs the following transportation planning procedures:

- Trip Generation
- Highway and Transit Network skimming
- Trip Distribution and the Highway Only Modules
- Modal Split
- Highway and Transit Trip Assignment

This section describes how to setup scenarios, run the models, and view the output. The Add-in allows one to store any number of scenarios. For example, one may want to have a Year 1999 Scenario and a Year 2025 Scenario. Scenarios are defined by a scenario name, a set of input files, output files, and model parameters, and there are special features in the Add-in to assist in setting up scenarios. Once a scenario has been setup, the model steps for a scenario can be run separately, run as a group, or run iteratively with feedback.

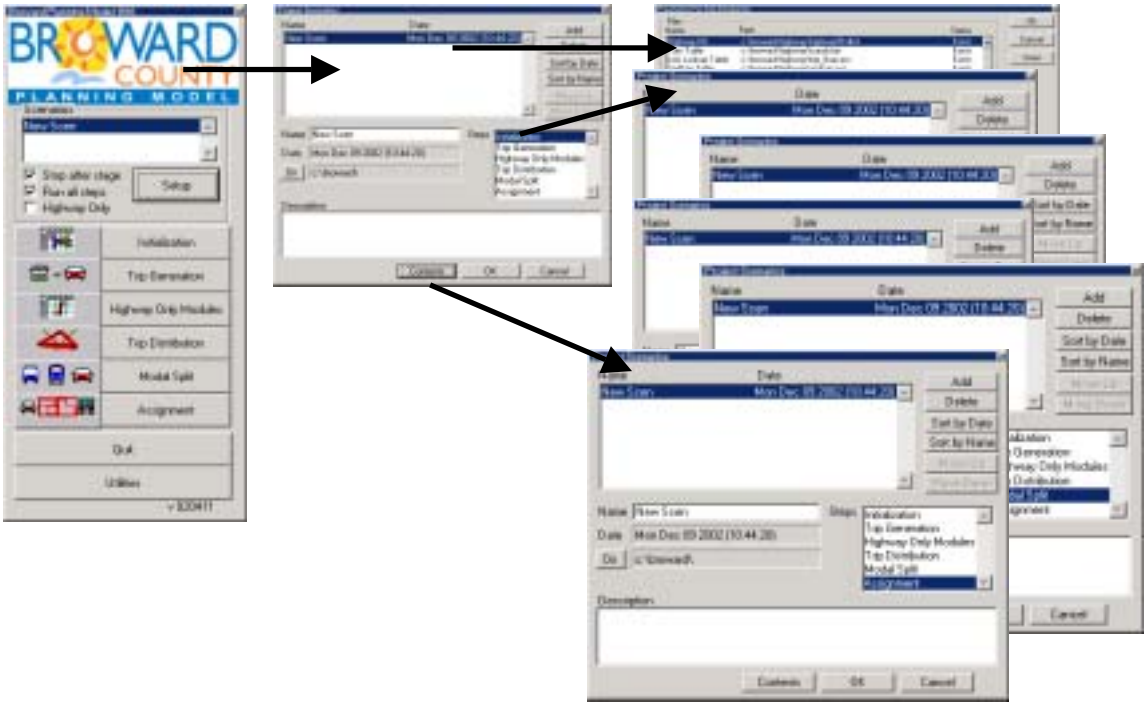
There are three key dialog boxes that are used to manage and run the model. These are shown below.

- The first is the main dialog box (called the Broward Planning Model dialog box), which is what appears when the Add-in is launched. From this dialog box, scenarios are selected and the models are run.

- The second dialog box is the Project Scenarios dialog box. This is invoked by clicking on the Setup button from the main dialog box. In this dialog box, the scenarios are managed. Here one can add, delete, sort, describe, and rename scenarios. Each scenario is defined by a set of input files, output files, and parameters.
- The third dialog box is where one enters and views the detailed information regarding the scenario. This type of dialog box is launched by clicking the Contents button in the Project Scenarios dialog box. The parameter manager dialog box will provide information for the Scenario and model Step that are highlighted in the Project Scenario dialog box. From the parameter manager dialog box you can open input or output files, change input or output files, and view and change model parameters.

The rest of this section explains how to work with these dialog boxes to setup and run the sample Broward model.

Main Dialog Box ***Scenario Manager*** ***Input/Output File and Parameter Managers***



Installing the Add-in

The custom Add-in is packaged in an easy-to-install setup program. Before installing the Add-in, one should delete all other previous versions of the Broward model that are installed on the

computer. The setup program is called setup.exe. It is located on the CD provided and should be run from within Windows. It will prompt the user for the directory in which TransCAD is located and a directory into which the data files are to be copied.

This step only needs to be run only once (per computer). After it is installed, running the Add-in is as simple as running TransCAD. First, start TransCAD, then go to Tools-Add-ins and choose the Add-in entitled Broward Planning. Click on OK to invoke the custom interface.

Computer Requirements

The Broward model contains large matrices and files and requires a reasonably powerful PC machine in order to run efficiently. The research team recommends the following as minimum standards:

- Pentium 700MHz
- 128MB of RAM memory
- Approximately 1 GB of free hard drive space per scenario to accommodate all input and output files

Launching the Add-in

Once the Add-in is installed using the steps described above, the main dialog box is launched through the Tools-Add-ins feature in TransCAD.

♦ **To Launch the Add-in**

1. If TransCAD is not running, launch TransCAD.
2. Choose Tools-Add-ins.
3. Choose Broward Planning and click OK to display the Broward Planning Model dialog box. (If you Broward Planning Model in the Add-ins window, click Cancel and INSTALL the Add-in by following the directions above.)

All other functionality for the Add-in is accessed through this main dialog box.

Working with the Year 1999 Base Scenario

In this section, one will learn how to setup, run, and view outputs for the Year 1999 Base Scenario.

Setting up the Year 1999 Base Scenario

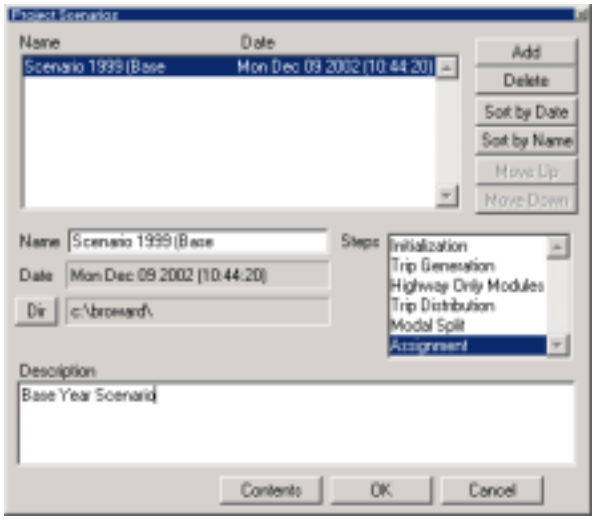
Before one can run the model, one has to first define the scenario. This involves providing TransCAD the name of the scenario along with the set of input files, output files, and parameters that define the scenario. This information is entered and viewed using the Project Scenarios and Parameter Manager dialog boxes. One can store any number of scenarios in the custom Add-in.

The Year 1999 Base Scenario is particularly straightforward to setup, because it is the default scenario provided with the custom Add-in (as defined in the BRWD_MOD.ASC file installed with the Add-in).

- **To Setup the Year 1999 Base Scenario**

1. If the Add-in is not launched, launch it by following the instructions above to open the Broward Planning Model dialog box.
2. From the Broward Planning Model dialog box, click on the Setup button to open the Project Scenarios dialog box. If there are no existing scenario files, the Custom Add-in will ask if a new one is to be created; click yes.
3. Click the Add button to add a new scenario.

   A scenario named New Scen is automatically created and added to the list of scenarios in the text box at the top of the Project Scenarios dialog box, and the current time is also listed. By default, New Scen is the Year 1999 Base Scenario. The input and output files as well as the parameters are automatically entered, and the model is ready to run. Note that if a user is setting up any Scenario other than the base scenario, then he/she will have to modify at least some of the input files and parameters to match the scenario of interest. This is described later in the section on Working with Additional Scenarios.
4. Rename the scenario to something more descriptive by entering the new name in the Name text box (for example, Year 1999 Base Scenario), and, if desired, provide a longer description of the scenario in the Description text box.



5. Click OK to save the settings of the scenario and close the Project Scenarios dialog box.

Now the base scenario is setup and ready to run. Note that the model steps are listed in the Steps text box and the directory listed for the scenario is the location to which the installation program installed the input and output files. If one wants to view or modify any of the scenario settings (input/output files or parameters), one can do so by clicking on the Contents button (described under Viewing Outputs... and Modifying Scenarios).

Running the Year 1999 Base Scenario

Models are run from the Broward Model Model dialog box. Be sure to exit the Project Scenarios dialog box (by clicking OK) so that the settings for the scenario are updated and saved.

Any scenario can be run either with the full model, with the Highway-Only Model, or one model step at a time.

- **To Run the Year 1999 Base Scenario with the Full Model**

1. From the Broward Planning Model dialog box, choose the Year 1999 Base Scenario from the Scenarios selection box. (If you have not yet created the year 1999 base scenario, do so by following the instructions above.)
2. Make sure that the Highway Only checkbox is unchecked.
3. Uncheck the Stop after stage checkbox.

4. Make sure that the Run all steps checkbox is checked.
5. Click the Initialization button.

The custom Add-in will first run all model steps from Initialization through Assignment.

- **To Run all of the Model Steps for the Year 1999 Base Scenario with the Highway-Only Model**

1. From the Broward Planning Model dialog box, choose the Year 1999 Base Scenario from the Scenarios selection box. (If you have not yet created the year 1999 base scenario, do so by following the instructions above.)
2. Make sure that the Highway Only checkbox is checked.
3. Uncheck the Stop after stage checkbox.
4. Make sure that the Run all steps checkbox is checked.
5. Click the Initialization button.

The custom Add-in will run only the steps associated with the higway-only model.

- **To Run a Single Model Step of Year 1999 Base Scenario**

1. From the Broward Planning Model dialog box choose the Year 1999 Base Scenario from the Scenarios selection box.
2. Make sure that the Stop after stage checkbox is checked.
3. Make sure that the Run all steps checkbox is checked.
4. Make sure that the input files necessary for the model you want to run are available. (The easiest way to do this for the base scenario is to run each of the prior stages of the model by following these steps.)
5. Click the button that states the step you want to run (for example, Modal Split).

The custom Add-in will run just that stage and stop.

Viewing and Analyzing Outputs for the Year 1999 Base Scenario

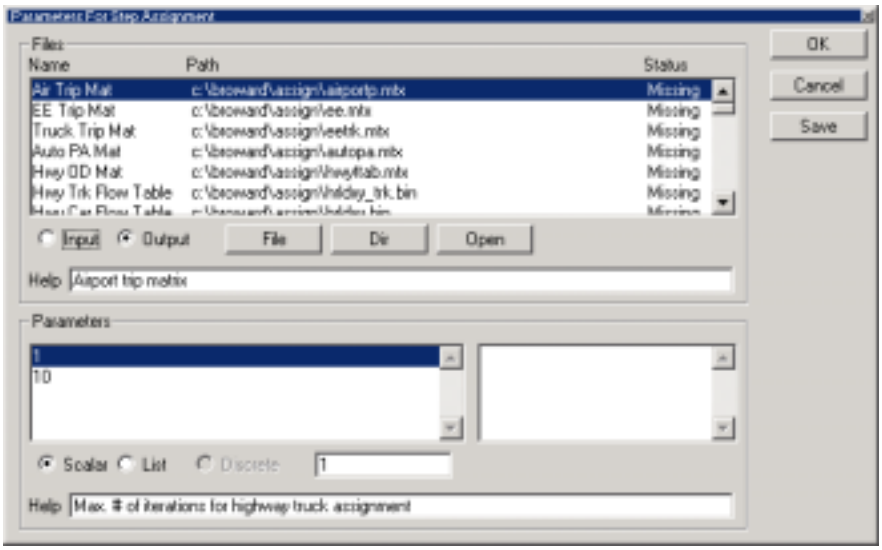
The full functionality of TransCAD is available to analyze the outputs of a model run. There are innumerable ways to perform the analysis. Below are a few suggestions to get started viewing the output results. For more information, see the TransCAD User's Guide and Travel Demand Modeling with TransCAD manual.

♦ **To Open the Output (or Input) Files for any Model Step**

If the name and location of the output file are known (information for the base year scenario is provided in the Model Documentation manual), one can always choose File-Open in the TransCAD menu, choose the file type to view (Geographic File, Dbase table, Matrix, etc.) and choose the file to be opened. Alternatively, one can open the files from the Parameter manager dialog box of the Add-in. To use this approach:

1. Click the Setup button in the Broward Planning Model main dialog box to open the Project Scenarios dialog box.
2. Select the Scenario and model Step of Interest.

3. Click the Contents button to open the Parameter Manager dialog box.
4. Click the Output radio button to get the list of output files.



5. Select the files that you want to open (use Shift-click or Ctrl-click to select multiple files).
6. Click the Open button and the Add-in will open the files into TransCAD.

Note that when the Parameter manager dialog box is open, one can change the step or the scenario that is displayed in the dialog box by making the selection in the Project Scenario dialog box.

There are many files that play a role in several of the model steps. For example, Modal Split produces an OD flow matrix as an output, which is an input to Assignment. However, note that each file appears **only once** in the entire set of Parameter Manager dialog boxes, usually in the first model step for which it is used.

- **To Generate and View the Trip Length Distribution (TLD)**

Open the Hwy CG Skim Mat matrix and the HBW Trip Mat located in the Trip Distribution Output Files:

1. Use the steps described above to open the HBW Trip Mat, which is an output from the Trip Distribution step, and the Hwy CG Skim Mat, which is an output to the Trip Distribution step.

Generate the Trip Length Distribution:

2. From the TransCAD menu, choose Planning-Planning Utilities-Trip Length Distribution to display the Trip Length Distribution dialog box.
3. Select the OD Matrix as the Base Matrix File, the Shortest Path Matrix as the Impedance Matrix File.
4. Click the Options button and enter a bin starting point of 0, an ending point of 60, and bin sizes of 5. Click OK.
5. Click OK and enter the name for the output TLD matrix, and click OK to generate the matrix.

TransCAD generates the TLD matrix and shows a Results Summary dialog box. Click Show Report to view summary statistics such as minimum, maximum, and average trip lengths. Otherwise Click Close to view the TLD matrix.

To generate a chart of the TLD:

6. Highlight the Percent column in the TLD matrix.

7. Choose File-New to display the New File dialog box. Choose Chart and click OK to open the Matrix Chart Data dialog box.
8. Click OK (to chart the Selected Cells) to display the Chart Properties dialog box.
9. Choose a bar chart and click OK.

TransCAD displays a chart of the TLD.

♦ To View Highway Volume Outputs for the PM Peak Period

Open the highway geography and highway flow table:

1. Use the steps described above to open the Highway DB file, which is an input to the Initialization model step, and the Hwy Car Flow Table, which is an output of the Assignment step.

Join the highway geography to the flow table:

2. From the TransCAD menu, choose Dataview-Join and join the HNET layer's ID field to flow HRLDXY's ID1 field. Click OK to view the join.

Generate a flow map:

3. Choose Planning-Planning Utilities-Create Flow Map to create both a size theme on the links based on volume flow and a color theme based on VOC ratio.

Use the utilities in TransCAD to move about the map, add labels, etc.

♦ To View the Running Log and Report Files

Each time a model is run, the Add-in will save information on the run in two text files, the log file and the report file. The log file lists every procedure that was run and any warnings that were encountered. The report file lists every procedure that has been run. It also lists all of the input data that was used for the procedure. To view these files:

1. Choose Edit-Preferences from the TransCAD menu to open the Preferences dialog box.
2. Choose the Logging tab.
3. Click on the Display button to display either the log file or the report file.

Information on the most recent model run will be at the end of these files.

Working with Additional Scenarios

Any number of scenarios beyond the Year 1999 Base Scenario can be setup, stored, and run using the Add-in.

Adding a Scenario

- **To Create an Additional Scenario**

1. From the Broward Planning Model dialog box, click on the Setup button to open the Project Scenarios dialog box.
2. Click the Add button to add a new scenario. The Add-in will create a scenario named New Scen and add it (along with the current date and time) to the end of the list of scenarios in the dialog box.
3. Rename the scenario using the Name text box.
4. Enter a description for the scenario in the Description text box.

By default, the added scenario is created using the settings for the default Year 1999 Base Scenario, and so you will have to re-specify at least some of these settings to generate the scenario of interest. The next step describes how to do this.

Modifying Scenarios

A scenario is defined by the set of input files, output files, and parameters for which the model is to be run. Each step of the model has a different set of files and parameters. These settings are managed using the Parameter manager dialog boxes, for which there is a different dialog box for each model step.

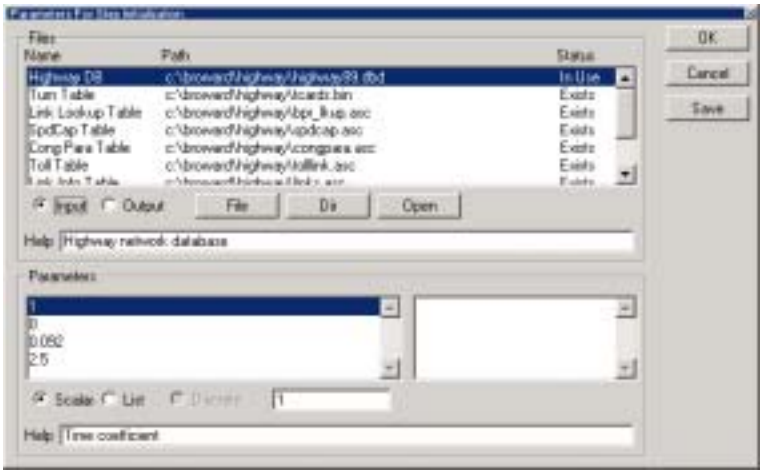
An important point in selecting the input files to use for a given scenario is that these files must match the input files provided for the default Year 1999 Base Scenario. This means that:

- All table inputs (Demographics table, trip rates table, etc.) must contain the same field names as the original default files and must have the same number of records. However, note that you can use any of the following formats for the tables: DBASE, Comma Delimited ASCII, Fixed Format ASCII and Fixed Format Binary
- Matrices must contain the Ids of the Broward centroid nodes found on the node layer of the highway database (Ids 1-933). Currently, there are 933 such nodes.

If any of these restrictions are violated, the Add-in will give you error messages if you attempt to run the model.

- **To Modify the Input Files, Output Files, or Parameters Used for a Scenario**

1. From the Project Scenarios dialog box, select the scenario of interest from the list of scenarios and the model step of interest from the Steps selection box.
2. Click the Contents button to open the Parameters manager dialog box for the chosen scenario and model step.



This dialog box will automatically update to reflect the selections in the Project Scenarios dialog box. So to view a different model step or scenario, simply make the selections in the Project Scenarios dialog box. Only one Parameter manager dialog box can be viewed at a time.

3. Use this dialog box to manage the input and output files as follows

To do this…	Do this…
View the list of input files	Click the Input radio button, and all input files for the model step will be displayed in the Files scroll list.
View the list of output files	Click the Output radio button, and all output files for the step will be displayed in the Files scroll list.
Obtain a description of the file	Select the file of interest from the Files scroll list, and a description will be provided in the Help text box.
Check the status of a file	The Status column in the Files scroll list states whether a file Exists, is In Use, or is Missing.

	In Use files will be automatically closed when a model is run. All of the input files must Exist in order for a model to be run. Any output files that Exist will be overwritten when a model is run.
Open a file	Either double click on the file in the Files scroll list, or select the file in the Files scroll list and Click the Open button. Networks (.NET) and transit networks (.TNW) cannot be opened, but their geographic counterparts (.DBD line geographic files and .RTS route systems) can.
Change the file that is used	Select the file you want to change from the Files scroll list. Click on File and select the file that you want to use. All input files must match the structure of the input files provided with the Year 1999 Base Scenario
Change the directory of a file	To change the directory of a file, select it from the Files scroll list, click on Dir and select the directory. To change the directory for multiple files, use Shift-click or Ctrl-click to select multiple files from the Files scroll list.

4. Use this dialog box to manage the parameters as follows

To do this...	**Do this...**
View scalar parameters	Click the Scalar radio button and the scalar parameters will be listed in the Parameters scroll list.
View List (Vector) parameters	Click the List radio button and any parameter lists will be displayed in the left Parameters scroll list. Click on a parameter list and the parameters that make up the list will be displayed in the right Parameters scroll list.
Obtain a description of the Parameter	Select a parameter from the Parameters scroll list, and a description will be provided in the Help text box.
Change the parameter	Select the parameter from the Parameters scroll list and enter the value of the parameter in the text box.

Managing Scenarios

Any number of scenarios can be stored in the Add-in. Scenarios can be added, deleted, and modified at will.

- **To Manage the Scenarios**

1. From the Broward Planning Model dialog box, click the Setup button to open the Project Scenarios dialog box.

2. Use this dialog box to manage the scenarios as follows

To do this...	Do this...
Add a new scenario	Click the Add button and a scenario named New Scen will be added to the bottom of the list of scenarios along with a time stamp. This scenario will, by default, be setup with the Year 1999 Base Scenario settings.
Delete a scenario	Select the scenario you want to delete from the Scenario scroll list, and click the Delete button.
Sort the scenarios by date	Click the Sort by Date button.
Sort the scenarios by name	Click the Sort by Name button.
Move a scenario up or down	Select the scenario you want to move up in the scenario list and click the Move Up or Move Down button.
Rename a scenario	Select the scenario you want to rename and enter the new name in the Name text box.
Change the default directory	Select the scenario for which you want to change the default directory for the input and output files, click the Dir button and select the directory. The directory for all input and output files for the scenario will be changed to this default directory.

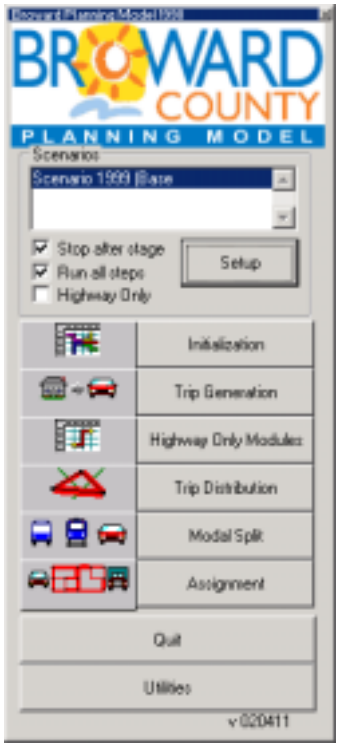
Provide a description	Select the scenario for which you want to provide a description, and enter the description in the Description text box.
Save scenario settings	Click OK.

Running a Scenario

Running a scenario is no different than running the Year 1999 Base Scenario. However, the key to running a scenario that is not the default is to verify that the inputs are setup correctly. This means that all input files must exist, and they must have the same format as the default input files, as described above in Modifying Scenarios. Another important point is that all existing Output files will be overwritten when the model is run.

- **To Run a Scenario**

1. Scenarios are run from the Broward Planning Model dialog box:



2. Select the scenario you want to run from the list of scenarios, and use this dialog box to run models as follows:

To do this…	Do this…
Run a model with Feedback	Click the Feedback Model button.
Run a model without Feedback	Uncheck Stop after stage, check Run all steps, click the Initialization button.
Run one model step	Verify that all inputs for the model step exist. Check Stop after stage, check Run all steps, and click the button that states the model step you want to run.
Skip a model step	Click on the picture button next to the step you want to skip to open the Stage Step Settings dialog box. Uncheck any step you do not want to run and click OK. The Run all steps checkbox will automatically be unchecked.
View/modify scenario settings	Click Setup to open the Project Scenarios dialog box, and follow instructions above regarding setting up scenarios.
Exit the Add-in	Click Quit

Viewing and Analyzing Outputs from a Scenario

Once the model is run, you can use all of the functionality in TransCAD to view and analyze results. There are innumerable ways to perform the analysis. Examples of such analysis were provided under the heading of Viewing and Analyzing Outputs of the Year 1999 Base Year Scenario. For more information, see the TransCAD User's Guide and Travel Demand Modeling with TransCAD manual.

In summary, this research project has resulted in the development of a suite of data integration tools and procedures that can be used to support statewide transportation modeling and planning processes in the state. This executive summary provided a brief overview of the methodology adopted by the research team and the sample model system that illustrates the data integration procedures. The sample model system has been developed in a TransCAD format consistent with the new modeling directions in the State of Florida. Users should refer to the TransCAD documentation and other documents provided on the CD's for detailed instructions on the use of the procedures and software.

In addition to developing a suite of data integration tools and procedures consistent with the TransCAD format, the research team also worked with Geographic Data Technology, Inc. to develop highway network systems that can serve as a reference for transportation modeling networks in the state. The Appendix section provides a small extract of the documentation for the GDT highway networks. Full documentation is available on the CD's accompanying this report.

Introduction 1

Inside This Section:

- *Description*

Description

The Dynamap / Transportation Transaction product provides customers with GDT's most current data editing work in an efficient monthly deliverable. Transaction files only include information on data changes since the previous versions and allow the customer to have the most up-to-date data without reloading the entire Dynamap / Transportation product every quarter.

Transactions are designed for users that take advantage of RDBMS or database-like methods of storing geographic data.

Dynamap / Transportation Transactions are delivered monthly and are tiled by state.

Transactions are applied serially from the January release of product and are not guaranteed to line up with standard product at quarterly releases.

Getting Started 2

Inside This Section:

What's In This Package?

With your shipment of the Dynamap / Transportation Transactions Version 3.0 you should have received, in addition to this manual:

- **Dynamap/Transportation Transactions** on the correct media (CD-ROM, cartridge, or diskette).
- **Packing Slip** (paper or electronic listing of package contents)
- **Documentation CD**

Check now to be sure that you have received the correct order.

NOTE:
For a full discussion of the files you have received, see "Directory and File Naming Conventions" in this section.

Format

Dynamap / Transportation Transactions is available in the following formats:

Fixed-length ASCII format with line feeds
ArcSDE-Loadable format

Currentness, Datum, Projection, Precision

Transactions are provided in NAD 83, geographic projection using decimal degrees to six digits of precision. The only exception is Hawaii, which is in the Old Hawaiian Datum.

Every tile of Dynamap / Transportation transactions will include a transaction currency file that includes currency information both in the file as well as the filename. This text file will include: the month and year of the transaction, the product to which it applies, and a series to indicate the order in which the file needs to be applied to the base product.

The following is an example of the transaction currency file:

```
DYNAMAP/TRANSPORTATION V4.0 TRANSACTION FILE
January 2002
SERIES 1
```

(Series 2 = February; Series 3 = March, etc.)

Transactions Concepts

Transportation Transactions are for streets only.

Add

An add transaction is one that generates a new Dynamap-ID. This can include a brand-new feature, a feature whose nodes have been moved, or a feature split into two or more features. Add transactions are often accompanied by delete transactions to represent a feature edit not covered by change transactions.

Change

Change transactions alter the data, but do not generate a new Dynamap-ID. Circumstances that prompt a change transaction are attribute editing and shape point (not node) editing.

Delete

A delete transaction is one that deletes a Dynamap-ID. Such operations can signify that a feature has been removed completely or has been replaced by another feature or features.

Directory and File Naming Conventions

When you receive your files, you can identify the file contents by understanding our directory structure and file naming conventions.

Dynamap Transportation Transaction files are found in the following directory structure:

State Tiled Data (ASCII format):

\usa

st

*st*xxxxst.*d*a1	Street Record Type 1 Add
*st*xxxxst.*d*a2	Street Record Type 2 Add
*st*xxxxst.*d*a4	Street Record Type 4 Add
*st*xxxxst.*d*a5	Street Record Type 5 Add
*st*xxxxst.*d*c1	Street Record Type 1 Change
*st*xxxxst.*d*c2	Street Record Type 2 Change
*st*xxxxst.*d*c4	Street Record Type 4 Change
*st*xxxxst.*d*c5	Street Record Type 5 Change
*st*xxxxst *d*dd	Street Record Type D Delete
*st*xxxxsf *d*ax	Street FIPS info Add
*st*xxxxsf *d*cx	Street FIPS info Change
datum.txt	
cpyright.*d*xx	
trfile*mm*.*d*xx	Transaction currency description file

State Tiled Data (ArcSDE-Loadable format):

\usa

st

*st*xst*mm*a.sde	Street Add
*st*xst*mm*c.sde	Street Change
*st*xst*mm*d.sde	Street Delete
datum.txt	
cpyright.*d*xx	
trfile*mm*.*d*xx	Transaction currency description file

where *st* = Two character state abbreviation;
mm= Month of transaction from 01 - 12
x – filler character
d – Delimiter

l	LF
t	CRLF
x	None

Copyright File

The copyright file included with this product is one of the following

File name	1st character of extension:	2nd and 3rd characters of extension:
cpyright.txx	**t**=carriage return/line feed	**xx**=fillers
cpyright.lxx	**l**=line feed	**xx**=fillers
cpyright.xxx	**x**=no delimiter	**xx**=fillers
cpyright.txt	text file	

and contains the following text:

Record Layout 3

Inside This Section:

Record Layouts – ASCII

Type 1 File Record Layout

Field	Start	End	Size	Type	Justify	Description
RT	1	1	1	C	Full	Record Type (Value "1")
VERSION	2	5	4	C	Full	Four character internal GDT code representing year and month of database currency
DYNAMAP_ID	6	15	10	C	Right	GDT Record Number
FEDIRP	16	17	2	C	Left	Feature Direction, Prefix
FENAME	18	47	30	C	Left	Feature Name
FETYP	48	53	6	C	Left	Feature Type
FEDIRS	54	55	2	C	Left	Feature Direction Suffix
FCC	56	58	3	C	Full	Feature Class Code
FRADDL	59	69	11	C	Right	From Address Left
TOADDL	70	80	11	C	Right	To Address Left
FRADDR	81	91	11	C	Right	From Address Right
TOADDR	92	102	11	C	Right	To Address Right
POSTAL_L	103	107	5	C	Left	Postal Code (ZIP or FSA) Left
POSTAL_R	108	112	5	C	Left	Postal Code (ZIP or FSA) Right
FRLONG	113	122	10	C	Right	Longitude From (leading –, implied 6 decimal places)
FRLAT	123	131	9	C	Right	Latitude From (leading +, implied 6 decimal places)
TOLONG	132	141	10	C	Right	Longitude To (leading –, implied 6 decimal places)
TOLAT	142	150	9	C	Right	Latitude To (leading +, implied 6 decimal places)
ACC	151	151	1	C	Full	Artery Classification Code (“1”, “2”, “3”, “4”)
NAME_TYPE	152	152	1	C	Full	“R” (always PRN for this product)
SHIELD	153	153	1	C	Full	“I”, “U”, “S”, or blank
HWY_NUM	154	158	5	C	Right	#, # with letter, or blank (if SHIELD is filled)
LENGTH	159	166	8	C	Right	Seg length in miles, (implied 4 decimal places)
SPEED	167	169	3	C	R	Speed in mph (US)
ONE_WAY	170	171	2	C	Full	"FT", "TF", or ""
F_ZLEV	172	173	2	C	Full	Functional From segment-end elevation
T_ZLEV	174	175	2	C	Full	Functional To segment-end elevation
FT_COST	176	183	8	C	Full	From-to travel time (minutes, implied 5 decimal
TF_COST	184	191	8	C	Full	To-from travel time (minutes, implied 5 decimal
FT_DIR	192	193	2	C	Left	From-to navigational direction
TF_DIR	194	195	2	C	Left	To-from navigational direction
NAME_FLAG	196	198	3	C	Right	Name metadata flag
DELIMITER			1/2		Full	Carriage return/line feed, line feed or nothing

Type 2 File Record Layout

Field	Start	End	Size	Type	Justify	Description
RT	1	1	1	C	Full	Record Type (value "2")
VERSION	2	5	4	C	Full	Four character internal GDT code representing year and month of database currency
DYNAMAP_ID	6	15	10	C	Right	GDT Record Number
RTSQ	16	18	3	C	Right	Record Sequence Number
LONG1	19	28	10	C	Right	Point 1, Longitude (-)
LAT1	29	37	9	C	Right	Point 1, Latitude (+)
LONG2	38	47	10	C	Right	Point 2, Longitude (-)
LAT2	48	56	9	C	Right	Point 2, Latitude (+)
LONG3	38	47	10	C	Right	Point 3, Longitude (-)
LAT3	48	56	9	C	Right	Point 3, Latitude (+)
LONG4	38	47	10	C	Right	Point 2, Longitude (-)
LAT4	48	56	9	C	Right	Point 2, Latitude (+)
LONG5	38	47	10	C	Right	Point 2, Longitude (-)
LAT5	48	56	9	C	Right	Point 2, Latitude (+)
LONG6	38	47	10	C	Right	Point 2, Longitude (-)
LAT6	48	56	9	C	Right	Point 2, Latitude (+)
LONG7	38	47	10	C	Right	Point 2, Longitude (-)
LAT7	48	56	9	C	Right	Point 2, Latitude (+)
LONG8	38	47	10	C	Right	Point 2, Longitude (-)
LAT8	48	56	9	C	Right	Point 2, Latitude (+)
LONG9	38	47	10	C	Right	Point 2, Longitude (-)
LAT9	48	56	9	C	Right	Point 2, Latitude (+)
LONG10	57	65	10	C	Right	Point 10, Longitude (-)
LAT10	66	74	9	C	Full	Point 10, Latitude (+)
DELIMITER			½	C		Carriage return/line feed, line feed or nothing

Type 4 File Record Layout

Field	Start	End	Size	Type	Justify	Description
RT	1	1	1	C	Full	Record Type (value "4")
VERSION	2	5	4	C	Full	Four character internal GDT code representing year and month of database currency
DYNAMAP_ID	6	15	10	C	Right	GDT nationwide unique segment ID
RTSQ	16	18	3	C	Right	Record Sequence Number
NAME_ID	19	26	8	C	Right	Alternate Feature Name ID
NAME_TYPE	27	27	1	C	Full	Alternate Feature Name Type
SHIELD	28	28	1	C	Full	“I”, “U”, “S”, “A”, “T” or blank
HWY_NUM	29	33	5	C	Right	#, # with letter, or blank
FT_DIR	34	35	2	C	Left	From-to navigational direction
TF_DIR	36	37	2	C	Left	To-from navigational direction
NAME_FLAG	38	40	3	C	Right	Name metadata flag
DELIMITER			1/2	C		Carriage Return/Line Feed, Line Feed or

Type 5 File Record Layout

Field	Start	End	Size	Type	Justify	Description
RT	1	1	1	C	Full	Record Type (value "5")
STATE	2	3	2	C	Full	FIPS State Code for File*
COUNTY	4	6	3	C	Full	FIPS County Code for File*
NAME_ID	7	14	8	C	Right	Alternate Feature Name ID
FEDIRP	15	16	2	C	Left	Feature Direction, Prefix
FENAME	17	46	30	C	Left	Feature Name
FETYP	47	52	6	C	Left	Street Type
FEDIRS	53	55	2	C	Left	Feature Direction, Suffix
DELIMITER			1/2	C		Carriage Return/Line Feed, Line Feed or Nothing

*FIPS codes taken from the left segment

Street FIPS Information (feature type 'A' only)

Field	Size	Type	Justify	Fill	Description
DYNAMAP_ID	10	C	r	sp	GDT nationwide unique segment ID
STATE00_L	2	C	l		2000 state FIPS left
STATE00_R	2	C	f		2000 state FIPS right
COUNTY00_L	3	C	f		2000 county FIPS left
COUNTY00_R	3	C	r		2000 county FIPS right
MCD00_L	5	C	f		2000 FIPS MCD/CCD left
MCD00_R	5	C	f		2000 FIPS MCD/CCD right
PLACE00_L	5	C	f	sp	2000 FIPS Place left
PLACE00_R	5	C	f		2000 FIPS Place right

Type D (deletion) File Record Layout

Field	Start	End	Size	Type	Description
RECNUM	1	10	10	C	GDT Record Number

Record Layout - ArcSDE-Loadable

Item Name	Type	Width	Dec.	Description
BUS_FID	L	-		Spatial information storage
DYNAMAP_ID	I	10		Unique NorAm record number
L_F_ADD	C	11		Left from address
L_T_ADD	C	11		Left to address
R_F_ADD	C	11		Right from address
R_T_ADD	C	11		Right to address
PREFIX	C	2		Street prefix
NAME	C	40		Street name
TYPE	C	6		Street type
SUFFIX	C	2		Feature direction suffix
FCC	C	3		Feature Class Code
POSTAL_L	C	5		Postal code (ZIP or FSA) left
POSTAL_R	C	5		Postal code (ZIP or FSA) right
ACC	C	1		Artery Classification Code
NAME_TYPE	C	1		“R” (always PRN for this product)
SHIELD	C	1		“T”, “I”, “U”, “S”, “A”, or blank
HWY_NUM	C	5		#, # with letter, or blank
SEG_LEN	D	8	4	Segment length in miles
SPEED	I	3		Speed in miles per hour
ONE_WAY	C	2		One-way indicator
F_ZLEV	I	2		From node elevation
T_ZLEV	I	2		To node elevation
FT_COST	D	10	6	From-To impedance in minutes
TF_ COST	D	10	6	To-From impedance in minutes
FT_DIR	C	2		From-To navigation direction
TF_DIR	C	2		To-From navigation direction
NAME_FLAG	I	3		Name metadata flag
ALT1_PREFIX	C	2		Street prefix
ALT1_NAME	C	40		Street name
ALT1_TYPE	C	6		Street type
ALT1_SUFFIX	C	2		Feature direction suffix
ALT1_NAME_TYPE	C	1		“G” or blank
ALT1_SHIELD	C	1		“T”, “I”, “U”, “S”, “A”, or blank
ALT1_HWY_NUM	C	5		#, # with letter, or blank
ALT1_FT_DIR	C	2		From-To navigation direction
ALT1_TF_DIR	C	2		To-From navigation direction
ALT1_NAME_FLAG	I	3		Name metadata flag
ALT2_PREFIX	C	2		Street prefix
ALT2_NAME	C	40		Street name
ALT2_TYPE	C	6		Street type
ALT2_SUFFIX	C	2		Feature direction suffix
ALT2_NAME_TYPE	C	1		“G” or blank
ALT2_SHIELD	C	1		“T”, “I”, “U”, “S”, “A”, or blank
ALT2_HWY_NUM	C	5		#, # with letter, or blank
ALT2_FT_DIR	C	2		From-To navigation direction
ALT2_TF_DIR	C	2		To-From navigation direction

ALT2_NAME_FLAG	I	3		Name metadata flag
ALT3_PREFIX	C	2		Street prefix
ALT3_NAME	C	40		Street name
ALT3_TYPE	C	6		Street type
ALT3_SUFFIX	C	2		Feature direction suffix
ALT3_NAME_TYPE	C	1		"G" or blank
ALT3_SHIELD	C	1		"T", "I", "U", "S", "A", or blank
ALT3_HWY_NUM	C	5		#, # with letter, or blank
ALT3_FT_DIR	C	2		From-To navigation direction
ALT3_TF_DIR	C	2		To-From navigation direction
ALT3_NAME_FLAG	I	3		Name metadata flag
ALT4_PREFIX	C	2		Street prefix
ALT4_NAME	C	40		Street name
ALT4_TYPE	C	6		Street type
ALT4_SUFFIX	C	2		Feature direction suffix
ALT4_NAME_TYPE	C	1		"G" or blank
ALT4_SHIELD	C	1		"T", "I", "U", "S", "A", or blank
ALT4_HWY_NUM	C	5		#, # with letter, or blank
ALT4_FT_DIR	C	2		From-To navigation direction
ALT4_TF_DIR	C	2		To-From navigation direction
ALT4_NAME_FLAG	I	3		Name metadata flag
ALT5_PREFIX	C	2		Street prefix
ALT5_NAME	C	40		Street name
ALT5_TYPE	C	6		Street type
ALT5_SUFFIX	C	2		Feature direction suffix
ALT5_NAME_TYPE	C	1		"G" or blank
ALT5_SHIELD	C	1		"T", "I", "U", "S", "A", or blank
ALT5_HWY_NUM	C	5		#, # with letter, or blank
ALT5_FT_DIR	C	2		From-To navigation direction
ALT5_TF_DIR	C	2		To-From navigation direction
ALT5_NAME_FLAG	I	3		Name metadata flag
STATE00_L	C	2		2000 state FIPS left
STATE00_R	C	2		2000 state FIPS right
COUNTY00_L	C	3		2000 county FIPS left
COUNTY00_R	C	3		2000 county FIPS right
MCD00_L	C	5		2000 FIPS MCD/CCD left
MCD00_R	C	5		2000 FIPS MCD/CCD right
PLACE00_L	C	5		2000 FIPS Place left
PLACE00_R	C	5		2000 FIPS Place right

Introduction 1

In This Section:

- *About Census Boundary Files*

About Census Boundary Files

Census Boundaries are a set of boundary and inventory files representing seven different levels of Census geography: State, County, Tract, Block Group, Block, Place, and MCD.

The data included in these files was extracted from Census TIGER 2000 data.

Latitude/Longitude Data

DIME files are unsigned and have 6 implied decimal places. Northern latitudes are positive (0° to 90°), southern latitudes are negative (0° to -90°). West longitudes (including most of the USA) are negative (0° to -180°).

Projection

This product is delivered in Geographic projection.

All coordinates are referenced to NAD83 except for Hawaii state tile, which is in the old Hawaiian datum. Hawaii in the nation tile is NAD83.

Generalization

These boundaries have been generalized to 30,000 points per polygon for MapInfo format only. Every boundary has as many points as are required to draw its shape accurately.

Water

Internal water features are not included in the Census boundary products. The exceptions are some shoreline water features in areas "without shoreline buffer." See below for additional details.

All states that are bounded by the Atlantic Ocean, The Gulf of Mexico, The Pacific Ocean and The Great Lakes will have two sets of boundaries for those areas that extend out into the water:

- The first set of boundaries will follow the shoreline and will not extend into the ocean or lake. These boundaries are referred to as "without shoreline buffer".
- The second set of boundaries will extend to the political boundary of the state. These boundaries are referred to as "with shoreline buffer".

The coastal extreme of a database is represented by the political boundary or 12-mile limit. Note that extensions into water are included in area calculations.

Centroids for multi-polygon features are generated for the largest polygon in the feature and all centroids are internal to that polygon. Centroids of buffered polygons may be located over water within the 12-mile limit. Centroids of non-buffered features will always be on the land side of the shoreline.

Getting Started 2

In This Section:

- *What's In This Package*
- *Directory Structure*
- *Copyright File*

What's In This Package?

With your shipment of the Dynamap / Census Boundary Files you should have received, in addition to this manual:

- **Dynamap/Census Boundary Files** on the correct media in the correct format.
- **Packing Slip** (printed or electronic list of package contents)
- **Documentation CD**

Check now to be sure that you have received the correct order.

For information on the installation of these files see the GDT *Data Installation* manual included on the Documentation CD sent with your order.

Directory Structure

When you receive your files, you can identify the file contents by understanding our directory structure.

Ungeneralized boundaries come in nationwide or state directories with product subdirectories. Product files are identified by the state abbreviation or state FIPS, depending on format.

> **Note:**
> Census Blocks are available tiled by county only.

Copyright File

The copyright file included with this product is one of the following:

File name	1st character of extension:	2nd and 3rd characters of extension:
cpyright.txx	**t**=carriage return/line feed	**xx**=fillers
cpyright.lxx	**l**=line feed	**xx**=fillers
cpyright.xxx	**x**=no delimiter	**xx**=fillers
cpyright.txt	text file	

and contains the following text:

The material contained herein includes proprietary and copyrighted data of Geographic Data Technology, Inc. (GDT), Lebanon, NH 03766-1445. Telephone: 800-331-7881. Copyright (C) 1984-2002. All rights reserved. Use is governed by applicable license agreement. Unauthorized duplication or use is prohibited.

ArcInfo Format 3

In This Section:

Introduction

Versions Supported

Dynamap / Census Boundary files in ArcInfo format are intended for the following versions of ArcInfo software:

ArcInfo 7.x and higher

Precision

ArcInfo format products come in double precision for use with workstation or mainframe ArcInfo.

Precision refers to the number of bits (single - 32 vs double - 64) used to store coordinate data, and is an inherent hardware limitation. Coverages in double precision are slightly more accurate, but also larger.

Native Format

ArcInfo coverages are shipped in **native** format (unEXPORTed) ready for use, and do not need to be processed in any way.

ArcInfo coverages are spatially indexed.

Shoreline Boundaries

All states that are bounded by the Atlantic Ocean, The Gulf of Mexico, The Pacific Ocean or the Great Lakes will have two sets of boundary files. One set will follow the shoreline and will not extend into the ocean or lake. The second set will extend to the political boundary of the state.

Directories and Files

Directory Structure

Arc/Info files are placed in the following directory structure:

Notes:
SS = State FIPS; **CCC** = County FIPS

Nationwide Tiles

usa/	Copyright file, genus.txt, dynaname.txx, datum.txt*
usa/state/	Nationwide State boundary and inventory
usa/county/	Nationwide County boundary and inventory
usa/place/	Nationwide Place boundary and inventory
usa/mcd/	Nationwide MCD boundary and inventory

State Tiles

usa/	dynaname.txx
usa/SS/	Copyright file, genf<stfips>.txt, datum.txt*
usa/SS/state	State level State boundary and inventory
usa/SS/county	State level County boundary and inventory
usa/SS/tract	State level Tract boundary and inventory
usa/SS/blk_grp	State level Block Group boundary and inventory
usa/SS/place	State level Place boundary and inventory
usa/SS/mcd	State level MCD boundary and inventory

County Tiles

usa/	dynaname.txx
usa/SS/	genf<stfips>.txt
usa/SS/SSCCC/	Copyright file, Datum.txt*
usa/SS/SSCCC/block	County level Block boundary and inventory

* Datum.txt should also be located in all other directories that contain data

Additional Files

- A standard GDT Copyright file will be placed in the product file directory
- Dynaname.txx file will be placed in the usa directory. Note: dynaname.txx has a crlf in it.
- Datum.txt will be placed in the product file directory. This file contains the datum of the tile (NAD83 or OLD HAWAIIAN DATUM). Record length is always 100+CRLF.

File Names:

ARCINFO COVERAGE WITH AND WITHOUT SHORELINE BUFFER

Layer: **With SB** = With shoreline buffer - boundary extends out to coding limit
Without SB = Without shoreline buffer - boundary follows shoreline
File Type: **B** = Boundary files; **I** = Inventory files

Layer	File type	Nationwide	by State	by County
STATE With SB	B I	sb0xxxxx sp0xxxxx	sb0SSxxx sp0SSxxx	
STATE Without SB	B I	sj0xxxxx sm0xxxxx	sj0SSxxx sm0SSxxx	
COUNTY With SB	B I	cy0xxxxx cp0xxxxx	cy0SSxxx cp0SSxxx	
COUNTY Without SB	B I	cj0xxxxx cm0xxxxx	cj0SSxxx cm0SSxxx	
TRACT With SB	B I		tr0SSxxx tp0SSxxx	
TRACT Without SB	B I		tj0SSxxx tm0SSxxx	
BLOCK GROUP With SB	B I		gb0SSxxx gi0SSxxx	
BLOCK GROUP Without SB	B I		gj0SSxxx gm0SSxxx	
BLOCK With SB	B I			bk0SSCCC bp0SSCCC
BLOCK Without SB	B I			bj0SSCCC bm0SSCCC
PLACE With SB	B I	pl0xxxxx pp0xxxxx	pl0SSxxx pp0SSxxx	
PLACE Without SB	B I	pj0xxxxx pm0xxxxx	pj0SSxxx pm0SSxxx	
MCD With SB	B I	mc0xxxxx mp0xxxxx	mc0SSxxx mpSSxxx	
MCD Without SB	B I	mj0xxxxx mm0xxxxx	mj0SSxxx mm0SSxxx	

State Record Layouts

Note:
Type: B = binary, **C** = character, **F** = floating

Boundary Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
STATE_NAME	20	20	C		State Name
STATE_FIPS	2	2	C		State FIPS Code
ST_ABB	2	2	C		State Abbreviation

Point Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
STATE_NAME	20	20	C		State name
STATE_FIPS	2	2	C		State FIPS code
ST_ABB	2	2	C		State abbreviation
AREA_MI	8	11	F	3	Area in square miles
CENT_LAT	9	9	C		Centroid latitude
CENT_LON	11	11	C		Centroid longitude

County Record Layouts

Note:
Type: B = binary, **C** = character, **F** = floating

Boundary Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
COUNTYNAME	20	20	C		County name
CTY_KEY	5	5	C		County key

Point Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
COUNTYNAME	20	20	C		County name
COUNTY	3	3	C		County fips code
CTY_KEY	5	5	C		County key
ST_ABB	2	2	C		State abbreviation
AREA_MI	8	11	F	3	Area in square miles
CENT_LAT	9	9	C	6	Centroid latitude
CENT_LON	11	11	C	6	Centroid longitude

Tract Record Layouts

Note:
Type: B = binary, **C** = character, **F** = floating

Boundary Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
TRACT	7	7	C	2	Census Tract Code
TRC_KEY	11	11	C		Tract key

Point Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
TRACT	7	7	C	2	Tract Code
TRC_KEY	11	11	C		Tract key
ST_ABB	2	2	C		State abbreviation
COUNTYNAME	20	20	C		County name
AREA_MI	8	11	F	3	Area in square miles
CENT_LAT	9	9	C	6	Centroid latitude
CENT_LON	11	11	C	6	Centroid longitude

Block Group Record Layouts

Note:
Type: B = binary, **C** = character, **F** = floating

Boundary Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
BLOCKGROUP	1	1	C		Block Group Code
BKG_KEY	12	12	C		Block Group key

Point Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
BLOCKGROUP	1	1	C		Block Group Code
BKG_KEY	12	12	C		Block Group key
ST_ABB	2	2	C		State abbreviation
COUNTYNAME	20	20	C		County name
AREA_MI	8	11	F	3	Area in square miles
CENT_LAT	9	9	C	6	Centroid latitude
CENT_LON	11	11	C	6	Centroid longitude

Block Record Layouts

Note:
Type: B = binary, **C** = character, **F** = floating

Boundary Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
BLOCK	4	4	C		In Census2000, block code format has changed from 3 digits and 1 alpha to 4 digit numeric
BLK_KEY	15	15	C		Block key

Point Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
BLOCK	4	4	C		In Census2000, block code format has changed from 3 digits and 1 alpha to 4 digit numeric
BLK_KEY	15	15	C		Block key
ST_ABB	2	2	C		State abbreviation
COUNTYNAME	20	20	C		County name
AREA_MI	8	11	F	3	Area in square miles
CENT_LAT	9	9	C	6	Centroid latitude
CENT_LON	11	11	C	6	Centroid longitude

Place Record Layouts

Note:
Type: B = binary, **C** = character, **F** = floating

Boundary Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
PLACENAME	20	20	C		Place Name
PLACE	5	5	C		Place Code
PLC_KEY	10	10	C		Place key

Point Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
PLACENAME	20	20	C		Place name
PLACE	5	5	C		Place code
PLC_KEY	10	10	C		Place key
ST_ABB	2	2	C		State abbreviation
COUNTYNAME	20	20	C		County name
AREA_MI	8	11	F	3	Area in square miles
CENT_LAT	9	9	C	6	Centroid latitude
CENT_LON	11	11	C	6	Centroid longitude

MCD Record Layouts

Note:
Type: B = binary, **C** = character, **F** = floating

Boundary Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
MCD_NAME	20	20	C		MCD Name
MCD	5	5	C		MCD Code
MCD_KEY	10	10	C		MCD key

Point Files

Item Name	Width	Output	Type	Decimal	Description
AREA	8	18	F	5	Polygon area
PERIMETER	8	18	F	5	Polygon perimeter
COVNAME#	4	5	B		Internal number
COVNAME -ID	4	5	B		Feature User-ID
MCD_NAME	20	20	C		MCD name
MCD	5	5	C		MCD code
MCD_KEY	10	10	C		MCD key
ST_ABB	2	2	C		State abbreviation
COUNTYNAME	20	20	C		County name
AREA_MI	8	11	F	3	Area in square miles
CENT_LAT	9	9	C	6	Centroid latitude
CENT_LON	11	11	C	6	Centroid longitude

ArcView Format 4

In This Section:

- *Introduction*
- *Setting the Data Path*
- *Directories and Files*
- *Displaying a Coverage*
- *Record Layouts*

Introduction

Versions Supported

Dynamap/Census Boundary Files in Environmental Systems Research Institute (ESRI) ArcView format are intended for the following versions of ArcView software:

ArcView 3.2 or higher

Precision

ArcView format products are available in double precision only.

Precision refers to the number of bits (single - 32 bits, double - 64 bits) used to store coordinate data, and is an inherent hardware limitation. Coverages in double precision are higher in resolution and therefore slightly more accurate, but also larger.

Shoreline Boundaries

All states that are bounded by the Atlantic Ocean, The Gulf of Mexico, The Pacific Ocean, or the Great Lakes will have two sets of boundary files. One set will follow the shoreline and will not extend into the ocean or lake. The second set will extend to the political boundary of the state.

Setting the Data Path

Before working with ArcView you must set an environmental variable to identify the location of GDT data. The procedure is different depending on platform.

UNIX:

setenv gdtdata /<path to GDT data>
for example:

setenv GDTDATA /<server>/<path>/bndry

To list all environmental variables, type: **env**

PC:

set gdtdata=<path to GDT data>
for example:

set gdtdata=p:\arcview\bndry

To list all environmental variables, type: **set**

For other platforms consult your user manual.

IMPORTANT These are examples only. Use locations that are valid for your equipment.

NOTE:
The locations above for the variable "gdtdata" allow you to access the .apr file for viewing a coverage. The path used should extend to the directory preceding the ArcView files.

Directories and Files

Directory Structure

ArcView files are placed in the following directory structure.

Notes: ST = Alpha state Abbreviation; CNTY = Alpha County Abbreviation

Nationwide Tiles

usa/	Copyright file, genus.txt, dynaname.txx, datum.txt*
usa/state/	Nationwide State boundary and inventory
usa/county/	Nationwide County boundary and inventory
usa/place/	Nationwide Place boundary and inventory
usa/mcd/	Nationwide MCD boundary and inventory

State Tiles

usa/	dynaname.txx
usa/ST	Copyright file, genf<stfips>.txt, datum.txt*
usa/ST/state	State level State boundary and inventory
usa/ST/county	State level County boundary and inventory
usa/ST/tract	State level Tract boundary and inventory
usa/ST/blk_grp	State level Block Group boundary and inventory
usa/ST/place	State level Place boundary and inventory
usa/ST/mcd	State level MCD boundary and inventory

County Tiles

usa/	dynaname.txx
usa/ST/	genf<stfips>.txt
usa/ST/STCNTY/	Copyright file, datum.txt*
usa/ST/STCNTY/block	County level Block boundary and inventory

* Datum.txt should also be located in all other directories that contain data.

Additional Files

- A standard GDT Copyright file will be placed in the product file directory.
- Datum.txt will be placed in the product file directory. This file contains the datum of the tile (NAD83 or Old Hawaiian Datum). Record length is always 100+CRLF.

File Names:

ArcView Coverage With and Without Shoreline Buffer

Layer: **With SB** = With shoreline buffer - boundary extends out to coding limit
Without SB = Without shoreline buffer - boundary follows shoreline
File Type: **B** = Boundary files; **I** = Inventory files

Layer	File type	Nationwide	by State	by County
STATE With SB	B I	usaxxxsb.* usaxxxsp.*	STxxxxsb.* STxxxxsp.*	
STATE Without SB	B I	usaxxxsj.* usaxxxsm.*	STxxxxsj.* STxxxxsm.*	
COUNTY With SB	B I	usaxxxcb.* usaxxxci.*	STxxxxcb.* STxxxxci.*	
COUNTY Without SB	B I	usaxxxcj.* usaxxxcm.*	STxxxxcj.* STxxxxcm.*	
TRACT With SB	B I		STxxxxtb.* STxxxxti.*	
TRACT Without SB	B I		STxxxxtj.* STxxxxtm.*	
BLOCK GROUP With SB	B I		STxxxxgb.* STxxxxgi.*	
BLOCK GROUP Without SB	B I		STxxxxgj.* STxxxxgm.*	
BLOCK With SB	B I			STCNTYbk.* STCNTYbp.*
BLOCK Without SB	B I			STCNTYbj.* STCNTYbm.*
PLACE With SB	B I	usaxxxpl.* usaxxxpp.*	STxxxxpl.* STxxxxpp.*	
PLACE Without SB	B I	usaxxxpj.* usaxxxpm.*	STxxxxpj.* STxxxxpm.*	
MCD With SB	B I	usaxxxmc.* usaxxxmp.*	STxxxxmc.* STxxxxmp.*	
MCD Without SB	B I	usaxxxmj.* usaxxxmm.*	STxxxxmj.* STxxxxmm.*	

Displaying a Project

Single State Display

A project file (*.apr) is included with GDT data to provide convenient access to files necessary for display and to designate default colors and symbols for map display. For most purposes it is best to start ArcView by opening the project file.

1. Be sure you have set the environment variable as described previously; then begin an ArcView session.
2. Choose **Open Project** from the File menu, navigate to the appropriate directory, and double click the desired state **.apr** file.

   The project file opens the required data files and displays the data using specified shapes and colors.

Default shapes and colors for map objects are:

boundaries	black lines, single width
polygon fill	pale tan
Inventory points	filled black box

Multi-State Display

To view multi-state data sets:

1. Choose **Open Project** from the File menu, navigate to the appropriate directory, and double click the desired state file (***.apr**).
2. Click on the top of the View screen and resize the window until the preceding screen is visible. Select the preceding window by clicking on the top of the display.
3. Choose **Import** from the Project menu. Scroll to Project (*.apr) in the "List Files of Type" section. Select another state and click OK.
4. Choose Open for the new view. Resize the present view until both views are displayed on the screen. Select all themes (or layers) you wish to display in one coverage (hold the Shift key while clicking on appropriate themes). Choose **Copy Themes** from the Edit menu.
5. Select the view you wish to copy the themes to, and choose **Paste** from the Edit menu.

All themes you selected should now be visible as one coverage.

State Record Layouts

Notes:
Type: S = shape, **C** = character, **D** = decimal

Boundary Files

Field	Type	Width	Decimal	Description
Shape	S	8		
AREA	D	18	5	
PERIMETER	D	18	5	
covname #	D	10	0	Internal number
covname _	D	10	0	User-ID
STATE_NAME	C	20		State name
STATE_FIPS	C	2		State FIPS code
STATE_ABB	C	2		State Abbreviation

Point Files

Field	Type	Width	Decimal	Description
SHAPE	S	6		
AREA	D	18	5	
PERIMETER	D	18	5	
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
STATE_NAME	C	20		State name
STATE_FIPS	C	2		State FIPS code
ST_ABB	C	2		State abbreviation
AREA_MI	D	11	3	Associated polygon area in square miles.
CENT_LAT	C	9	6	Centroid latitude
CENT_LON	C	11	6	Centroid longitude (signed)

County Record Layouts

Notes:
Type: S = shape, **C** = character, **D** = decimal

Boundary Files

Field	Type	Width	Decimal	Description
SHAPE	S	8		
AREA	D	18	5	
PERIMETER	D	18	5	
covname #	D	10	0	Internal number
covname _	D	10	0	User-ID
COUNTYNAME	C	20		County name
CTY_KEY	C	5		State & county FIPS codes

Point Files

Field	Type	Width	Decimal	Description
SHAPE	S	6		
AREA	D	18	5	
PERIMETER	D	18	5	
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
COUNTYNAME	C	20		County name
COUNTY	C	3		County FIPS code
CTY_KEY	C	5		State & county FIPS codes
ST_ABB	C	2		State abbreviation
AREA_MI	D	11	3	Associated polygon area in square miles Decimal 4.3.
CENT_LAT	C	9	6	Centroid latitude
CENT_LON	C	11	6	Centroid longitude (signed)

Tract Record Layouts

Notes:
Type: S = shape, **C** = character, **D** = decimal

Boundary Files

Field	Type	Width	Decimal	Description
SHAPE	S	8		
AREA	D	18	5	
PERIMETER	D	18	5	
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
TRACT	C	7	2	Tract code (2 decimal places)
TRC_KEY	C	11	0	State (2) & county (3) FIPS codes, tract code (6 with 2 implied decimal places)

Point Files

Field	Type	Width	Decimal	Description
SHAPE	S	6		
AREA	D	18	5	
PERIMETER	D	18	5	
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
TRACT	C	7	2	Tract code (2 decimal places)
TRC_KEY	C	11	0	State (2) & county (3) FIPS codes, tract code (6 with 2 implied decimal places)
ST_ABB	C	2		State abbreviation
COUNTYNAME	C	20		County name
AREA_MI	D	11	3	Associated polygon area in square miles
CENT_LAT	C	9	6	Centroid latitude
CENT_LON	C	11	6	Centroid longitude (signed)

Block Group Record Layouts

Notes:
Type: S = shape, **C** = character, **D** = decimal

Boundary Files

Field	Type	Width	Decimal	Description
SHAPE	S	8		
AREA	D	18	5	
PERIMETER	D	18	5	
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
BLOCKGROUP	C	1	1	Block Group code
BKG_KEY	C	12	0	State (2) & county (3) FIPS codes, tract code (6 with 2 implied decimals), and block group code (1)

Point Files

Field	Type	Width	Decimal	Description
SHAPE	S	6		
AREA	D	18	5	
PERIMETER	D	18	5	
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
BLOCKGROUP	C	1		Block Group code
BKG_KEY	C	12		State (2) & county (3) FIPS codes, tract code (6 with 2 implied decimals), and block group code (1)
ST_ABB	C	2		State abbreviation
COUNTYNAME	C	20		County name
AREA_MI	D	11	3	Associated polygon area in square miles
CENT_LAT	C	9	6	Centroid latitude
CENT_LON	C	11	6	Centroid longitude (signed)

Block Record Layouts

Notes:
Type: S = shape, **C** = character, **D** = decimal

Boundary Files

Field	Type	Width	Decimal	Description
SHAPE	S	8		
AREA	D	18	5	
PERIMETER	D	18	5	
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
BLOCK	C	4		In Census2000, block code format has changed from 3 digits and 1 alpha to 4 digit numeric
BLK_KEY	C	15		State (2) & county (3) FIPS codes, tract code (6 with 2 implied decimals), and block code (4)

Point Files

Field	Type	Width	Decimal	Description
SHAPE	S	6		
AREA	D	18	5	Polygon area
PERIMETER	D	18	5	Polygon perimeter
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
BLOCK	C	4		In Census2000, block code format has changed from 3 digits and 1 alpha to 4 digit numeric
BLK_KEY	C	15		State (2) & county (3) FIPS codes, tract code (6 with 2 implied decimals), and block code (4)
ST_ABB	C	2		State abbreviation
COUNTYNAME	C	20		County name
AREA_MI	D	11	3	Associated polygon area in square miles
CENT_LAT	C	9	6	Centroid latitude
CENT_LON	C	11	6	Centroid longitude (signed)

Place Record Layouts

Notes:
Type: S = shape, **C** = character, **D** = decimal

Boundary Files

Field	Type	Width	Decimal	Description
SHAPE	S	8		
AREA	D	18	5	
PERIMETER	D	18	5	
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
PLACENAME	C	20		Place Name
PLACE	C	5		Place code
PLC_KEY	C	10		State (2) & county (3) FIPS codes, place code (5)

Point Files

Field	Type	Width	Decimal	Description
SHAPE	S	6		
AREA	D	18	5	
PERIMETER	D	18	5	
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
PLACENAME	C	20		Place name
PLACE	C	5		Place code
PLC_KEY	C	10		State (2) & county (3) FIPS codes, place code (5)
ST_ABB	C	2		State abbreviation
COUNTYNAME	C	20		County name
AREA_MI	D	11	3	Associated polygon area in square miles
CENT_LAT	C	9	6	Centroid latitude
CENT_LON	C	11	6	Centroid longitude (signed)

MCD Record Layouts

Notes:
Type: S = shape, **C** = character, **D** = decimal

Boundary Files

Field	Type	Width	Decimal	Description
SHAPE	S	8		
AREA	D	18	5	Polygon area
PERIMETER	D	18	5	Polygon perimeter
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
MCDNAME	C	20		MCD name
MCD	C	5		MCD code
MCD_KEY	C	10		State (2) & county (3) FIPS codes, MCD code (5)

Point Files

Field	Type	Width	Decimal	Description
SHAPE	S	6		
AREA	D	18	5	Polygon area
PERIMETER	D	18	5	Polygon perimeter
covname _	D	10	0	Internal number
covname _I	D	10	0	User-ID
MCDNAME	C	20		MCD name
MCD	C	5		MCD code
MCD_KEY	C	10		State (2) & county (3) FIPS codes, MCD code (5)
ST_ABB	C	2		State abbreviation
COUNTYNAME	C	20		County name
AREA_MI	D	11	3	Associated polygon area in square miles
CENT_LAT	C	9	6	Centroid latitude
CENT_LON	C	11	6	Centroid longitude (signed)

MapInfo Format 5

In This Section:

- *Versions Supported*
- *Directories and Files*
- *MapInfo Tables*

Versions Supported

Dynamap/Census Boundary Files in MapInfo format are designed for the following software versions:

MapInfo version 3.X and higher

Shoreline Boundaries

All states that are bounded by the Atlantic Ocean, The Gulf of Mexico, The Pacific Ocean or the Great Lakes will have two sets of boundary files. One set will follow the shoreline and will not extend into the ocean or lake. The second set will extend to the coding limit of the state.

Sewing

Block boundaries will align with state boundaries but do not always align perfectly with other census boundaries due to MapInfo generalization.

Directories and Files

Directory Structure

MapInfo files are placed in the following directory structure.

Notes: ST = Alpha state Abbreviation; CNTY = Alpha County Abbreviation

Nationwide Tiles

usa/	Copyright file, genus.txt, dynaname.txx, datum.txt
usa/state/	Nationwide State boundary and inventory
usa/county/	Nationwide County boundary and inventory
usa/place/	Nationwide Place boundary and inventory
usa/mcd/	Nationwide MCD boundary and inventory

State Tiles

usa/	dynaname.txx
usa/ST	Copyright file, genf<stfips>.txt, datum.txt
usa/ST/state	State level State boundary and inventory
usa/ST/county	State level County boundary and inventory
usa/ST/tract	State level Tract boundary and inventory
usa/ST/blk_grp	State level Block Group boundary and inventory
usa/ST/place	State level Place boundary and inventory
usa/ST/mcd	State level MCD boundary and inventory

County Tiles

usa/	dynaname.txx
usa/ST/	genf<stfips>.txt
usa/ST/STCNTY/	Copyright file, datum.txt
usa/ST/STCNTY/block	County level Block boundary and inventory

Additional Files

- A standard GDT Copyright file will be placed in the product file directory
- Workspace files will NOT be created.
- Datum.txt will be placed in the product file directory. This file contains the datum of the tile NAD83, or Old Hawaiian Datum. Record length is always 100+CRLF.

File Names:

MapInfo Coverage With and Without Shoreline Buffer

Layer: **With SB** = With shoreline buffer - boundary extends out to coding limit
Without SB = Without shoreline buffer - boundary follows shoreline
File Type: **B** = Boundary files; **I** = Inventory files

Layer	File type	Nationwide	by State	by County
STATE With SB	B I	usaxxxsb.* usaxxxsp.*	STxxxxsb.* STxxxxsp.*	
STATE Without SB	B I	usaxxxsj.* usaxxxsm.*	STxxxxsj.* STxxxxsm.*	
COUNTY With SB	B I	usaxxxcb.* usaxxxci.*	STxxxxcb.* STxxxxci.*	
COUNTY Without SB	B I	usaxxxcj.* usaxxxcm.*	STxxxxcj.* STxxxxcm.*	
TRACT With SB	B I		STxxxxtb.* STxxxxti.*	
TRACT Without SB	B I		STxxxxtj.* STxxxxtm.*	
BLOCK GROUP With SB	B I		STxxxxgb.* STxxxxgi.*	
BLOCK GROUP Without SB	B I		STxxxxgj.* STxxxxgm.*	
BLOCK With SB	B I			STCNTYbk.* STCNTYbp.*
BLOCK Without SB	B I			STCNTYbj.* STCNTYbm.*
PLACE With SB	B I	usaxxxpb.* usaxxxpi.*	STxxxxpb.* STxxxxpi.*	
PLACE Without SB	B I	usaxxxpj.* usaxxxpm.*	STxxxxpj.* STxxxxpm.*	
MCD With SB	B I	usaxxxmb.* usaxxxmi.*	STxxxxmb.* STxxxxmi.*	
MCD Without SB	B I	usaxxxmj.* usaxxxmm.*	STxxxxmj.* STxxxxmm.*	

Directories and Files
MapInfo State Tables

Notes:
Type: C = character, **D** = decimal

Boundary Files

Field	Size	Type	Index	Description
Statename	20	C	X	State name
State_FIPS	2	C	X	State FIPS code
State_Abbrev	2	C		State abbreviation

Point Files

Field	Size	Type	Decimal	Index	Description
Statename	20	C		X	State name
State_Abbrev	2	C			State Abbreviation
State_FIPS	2	C		X	State code
area_mi	11	D	3		Area in square miles (3 decimal places)
cent_lat	9	D	6		Centroid latitude (6 decimal places)
cent_lon	11	D	6		Centroid longitude (signed, 6 decimal places)

MapInfo County Tables

Notes:
Type: C = character, **D** = decimal

Boundary Files

Field	Size	Type	Index	Description
countyname	20	C	X	County name
cty_key	5	C	X	State and county FIPS codes

Point Files

Field	Size	Type	Decimal	Index	Description
countyname	20	C		X	County name
cty_fips	3	C		X	County FIPS code
cty_key	5	C		X	State and county FIPS codes
st_abbrev	2	C			State abbreviation
area_mi	11	D	3		Area in square miles (3 decimal places)
cent_lat	9	D	6		Centroid latitude (6 decimal places)
cent_lon	11	D	6		Centroid longitude (signed, 6 decimal places)

MapInfo Tract Tables

Notes:
Type: C = character, **D** = decimal

Boundary Files

Field	Size	Type	Index	Description
tract	7	C		Tract code
trc_key	11	C	X	State, county, tract codes

Point Files

Field	Size	Type	Decimal	Index	Description
tract	7	C			Tract code
trc_key	11	C	2	X	State, county, tract codes
st_abbrev	2	C			State abbreviation
countyname	20	C			County name
area_mi	11	D	3		Area in square miles (3 decimal places)
cent_lat	9	D	6		Centroid latitude (6 decimal places)
cent_lon	11	D	6		Centroid longitude (signed, 6 decimal places)

MapInfo Block Group Tables

Notes:
Type: C = character, **D** = decimal

Boundary Files

Field	Size	Type	Index	Description
blockgroup	1	C		Block group code
bkg_key	12	C	X	State (2), county (3), tract (6 with 2 implied decimals), and block group (1) codes

Point Files

Field	Size	Type	Decimal	Index	Description
blockgroup	1	C			Block group code
bkg_key	12	C		X	State (2), county (3), tract (6 with 2 implied decimals), and block group (1) codes
st_abbrev	2	C			State abbreviation
countyname	20	C			County name
area_mi	11	D	3		Area in square miles (3 decimal places)
cent_lat	9	D	6		Centroid latitude (6 decimal places)
cent_lon	11	D	6		Centroid longitude (signed, 6 decimal places)

MapInfo Block Tables

Notes:
Type: C = character, **D** = decimal

Boundary Files

Field	Size	Type	Index	Description
block	4	C		In Census2000, block code format has changed from 3 digits and 1 alpha to 4 digit numeric
blk_key	15	C	X	State (2), county (3), tract (6 with 2 implied decimals), and block (4) codes

Point Files

Field	Size	Type	Index	Description
block	4	C		In Census2000, block code format has changed from 3 digits and 1 alpha to 4 digit numeric
blk_key	15	C	X	State (2), county (3), tract (6 with 2 implied decimals), and block (4) codes
st_abbrev	2	C		State abbreviation
countyname	20	C		County name
area_mi	1	D	3	Area in square miles (3 decimal places)
cent_lat	9	D	6	Centroid latitude (6 decimal places)
cent_lon	11	D	6	Centroid longitude (signed, 6 decimal places)

MapInfo Place Tables

Notes:
Type: C = character, **D** = decimal

Boundary Files

Field	Size	Type	Index	Description
placename	20	C	X	Place name
place	5	C		Place code
plc_key	10	C		State, county, place codes

Point Files

Field	Size	Type	Decimal	Index	Description
placename	20	C		X	Place name
place	5	C			Place FIPS code
plc_key	10	C		X	State, county, place codes
st_abbrev	2	C			State abbreviation
countyname	20	C			County name
area_mi	11	D	3		Area in square miles (3 decimal places)
cent_lat	9	D	6		Centroid latitude (6 decimal places)
cent_lon	11	D	6		Centroid longitude (signed, 6 decimal places)

MapInfo MCD Tables

Notes:
Type: C = character, **D** = decimal

Boundary Files

Field	Size	Type	Index	Description
mcdname	20	C	X	MCD name
mcd	5	C		MCD code
Mcd_key	10	C		MCD name

Point Files

Field	Size	Type	Decimal	Index	Description
mcdname	20	C		X	MCD name
mcd	5	C			MCD code
mcd_key	10	C		X	State and county FIPS codes, MCD code
st_abbrev	2	C			State abbreviation
countyname	20	C			County name
area_mi	11	D	3		Area in square miles (3 decimal places)
cent_lat	9	D	6		Centroid latitude (6 decimal places)
cent_lon	11	D	6		Centroid longitude (signed, 6 decimal places)

ASCII Format Boundary and Inventory Files 6

In This Section:

- *General Description*
- *Directories and Files*
- *Record Layouts*

General Description

Inventory files provide additional information about boundary file polygons such as names, census area codes, area in square miles, and centroid position.

Polygons with area calculations of less than or equal to 1/1000 square miles have been assigned "0.001."

Centroid longitudes are signed and have 6 decimal places.

Centroid location is always within the boundary of a polygon, even in horseshoe shaped polygons where the balance point is outside of the polygon. Centroids for multiple polygon features are at the center of the largest polygon.

Shoreline Boundaries

All states that are bounded by the Atlantic Ocean, The Gulf of Mexico, The Pacific Ocean or the Great Lakes will have two sets of boundary files. One set will follow the shoreline and will not extend into the ocean or lake. The second set will extend to the coding limit of the state.

Directories and Files

Directory Structure

ASCII files are placed in the following directory structure.

Notes: SS = State FIPS; CCC = County FIPS

Nationwide Tiles

usa/	Copyright file, genfus.txt, dynaname.txx, datum.txt*
usa/state/	Nationwide State boundary and inventory
usa/county/	Nationwide County boundary and inventory
usa/place/	Nationwide Place boundary and inventory
usa/mcd/	Nationwide MCD boundary and inventory

State Tiles

usa/	dynaname.txx
usa/SS	Copyright file, genf<stfips>.txt, datum.txt*
usa/SS/state	State level State boundary and inventory
usa/SS/county	State level County boundary and inventory
usa/SS/tract	State level Tract boundary and inventory
usa/SS/blk_grp	State level Block Group boundary and inventory
usa/SS/place	State level Place boundary and inventory
usa/SS/mcd	State level MCD boundary and inventory

County Tiles

usa/	dynaname.txx
usa/SS/	genf<stfips>.txt
usa/SS/SSCCC/	Copyright file, Datum.txt*
usa/SS/SSCCC/block	County level Block boundary and inventory

* Datum.txt should also be located in all other directories that contain data.

Additional Files

- A standard GDT Copyright file will be placed in the product file directory
- Dynaname.txx file will be placed in the usa directory. Note: dynaname.txx has a crlf in it.
- Datum.txt will be placed in the product file directory. This file contains the datum of the tile NAD83, or OLD HAWAIIAN DATUM. Record length is always 100+CRLF.

File Names:

ASCII Coverage With and Without Shoreline Buffer

Layer: **With SB** = With shoreline buffer - boundary extends out to coding limit
Without SB = Without shoreline buffer - boundary follows shoreline
File extensions: l=linefeed; **xx**=version number
File Type: **B** = Boundary files; **I** = Inventory files

Layer	File type	Nationwide	by State	by County
STATE With SB	B I	sdxxxxxx.lxx sixxxxxx.lxx	sdSSxxxx.lxx siSSxxxx.lxx	
STATE Without SB	B I	sjxxxxxx.lxx smxxxxxx.lxx	sjSSxxxx.lxx smSSxxxx.lxx	
COUNTY With SB	B I	cdxxxxxx.lxx cixxxxxx.lxx	cdSSxxxx.lxx ciSSxxxx.lxx	
COUNTY Without SB	B I	cjxxxxxx.lxx cmxxxxxx.lxx	cjSSxxxx.lxx cmSSxxxx.lxx	
TRACT With SB	B I		tdSSxxxx.lxx tiSSxxxx.lxx	
TRACT Without SB	B I		tjSSxxxx.lxx tmSSxxxx.lxx	
BLOCK GROUP With SB	B I		gdSSxxxx.lxx giSSxxxx.lxx	
BLOCK GROUP Without SB	B I		gjSSxxxx.lxx gmSSxxxx.lxx	
BLOCK With SB	B I			bdSSCCC.lxx biSSCCC.lxx
BLOCK Without SB	B I			bjSSCCC.lxx bmSCCC.lxx
PLACE With SB	B I	pdxxxxxx.lxx pixxxxxx.lxx	pdSSxxx.lxx piSSxxxx.lxx	
PLACE Without SB	B I	pjxxxxxx.lxx pmxxxxxx.lxx	pjSSxxx.lxx pmSSxxxx.lxx	
MCD With SB	B I	mdxxxxxx.lxx mixxxxxx.lxx	mdSSxxxx.lxx miSSxxxx.lxx	
MCD Without SB	B I	mjxxxxxx.lxx mmxxxxxx.lxx	mjSSxxxx.lxx mmSSxxxx.lxx	

State Record Layout

State Dime File Record Layout

Column	Description	Width	Pos	Notes
1	Left State FIPS Code	2	1	
2	Blanks	13	3	
3	Right State FIPS Code	2	16	
4	Blanks	13	18	
5	From Latitude	8	31	Unsigned, 6 implied decimal places
6	From Longitude	9	39	Unsigned, 6 implied decimal places
7	To Latitude	8	48	Unsigned, 6 implied decimal places
8	To Longitude	9	56	Unsigned, 6 implied decimal places
9	Delimiter	1/2	65	Carriage return/line feed, line feed or nothing

State Inventory Files

Column	Description	Width	Pos	Notes
1	State FIPS code	2	1	
2	Blanks	16	3	
3	State abbreviation	2	19	
4	State name	28	21	
5	Area calculation	11	49	Decimal point in position 56
6	Blank	1	60	
7	Centroid latitude	9	61	Decimal point in position 63
8	Centroid longitude	11	70	Signed, decimal in position 74
9	Delimiter	1/2	81	Carriage return/line feed, line feed or nothing

County Record Layout

County Dime File Record Layout

Column	Description	Width	Pos	Notes
1	Left State FIPS Code	2	1	
2	Left County FIPS Code	3	3	
3	Blanks	10	6	
4	Right State FIPS Code	2	16	
5	Right County FIPS Code	3	18	
6	Blanks	10	21	
7	From Latitude	8	31	Unsigned, 6 implied decimal places
8	From Longitude	9	39	Unsigned, 6 implied decimal places
9	To Latitude	8	48	Unsigned, 6 implied decimal places
10	To Longitude	9	56	Unsigned, 6 implied decimal places
11	Delimiter	1/2	65	Carriage return/line feed, line feed or nothing

County Inventory Files

Column	Description	Width	Pos	Notes
1	State FIPS code	2	1	
2	County FIPS code	3	3	
3	Blanks	13	6	
4	State abbreviation	2	19	
5	County name	28	21	
6	Area calculation	11	49	Decimal point in position 56
7	Blank	1	60	
8	Centroid latitude	9	61	Decimal point in position 63
9	Centroid longitude	11	70	Signed, decimal in position 74
10	Delimiter	1/2	81	Carriage return/line feed, line feed or nothing

Tract Record Layout

Tract Dime File Record Layout

Column	Description	Width	Pos	Notes
1	Left State Code	2	1	
2	Left County Code	3	3	
3	Left Census Tract Code	4	6	
4	Left Tract Suffix	2	10	
5	Blanks	4	12	
6	Right State Code	2	16	
7	Right County Code	3	18	
8	Right Census Tract Code	4	21	
9	Right Tract Suffix	2	25	
10	Blanks	4	27	
11	From Latitude	8	31	Unsigned, 6 implied decimal places
12	From Longitude	9	39	Unsigned, 6 implied decimal places
13	To Latitude	8	48	Unsigned, 6 implied decimal places
14	To Longitude	9	56	Unsigned, 6 implied decimal places
15	Delimiter	1/2	65	Carriage return/line feed, line feed or nothing

Tract Inventory Files

Column	Description	Width	Pos	Notes
1	State FIPS code	2	1	
2	County FIPS code	3	3	
3	Census Tract code	4	6	
4	Tract Suffix	2	10	
5	Blanks	7	12	
6	State abbreviation	2	19	
7	County name	28	21	
8	Area calculation	11	49	Decimal point in position 56
9	Blank	1	60	
10	Centroid latitude	9	61	Decimal point in position 63
11	Centroid longitude	11	70	Signed, decimal in position 74
12	Delimiter	1/2	81	Carriage return/line feed, line feed or nothing

Block Group Record Layout

Block Group Dime File Record Layout

Column	Description	Width	Pos	Notes
1	Left State Code	2	1	
2	Left County Code	3	3	
3	Left Census Tract Code	4	6	
4	Left Tract Suffix	2	10	
5	Left Census Block Group	1	12	
6	Blank	3	13	
7	Right State Code	2	16	
8	Right County Code	3	18	
9	Right Census Tract Code	4	21	
10	Right Tract Suffix	2	25	
11	Right Census Block Group	1	27	
12	Blank	3	28	
13	From Latitude	8	31	Unsigned, 6 implied decimal places
14	From Longitude	9	39	Unsigned, 6 implied decimal places
15	To Latitude	8	48	Unsigned, 6 implied decimal places
16	To Longitude	9	56	Unsigned, 6 implied decimal places
17	Delimiter	1/2	65	Carriage return/line feed, line feed or nothing

Block Group Inventory Files

Column	Description	Width	Pos	Notes
1	State FIPS code	2	1	
2	County FIPS code	3	3	
3	Census Tract code	4	6	
4	Tract Suffix	2	10	
5	Block Group code	1	12	
6	Blanks	6	13	
7	State abbreviation	2	19	
8	County name	28	21	
9	Area calculation	11	49	Decimal point in position 56
10	Blank	1	60	
11	Centroid latitude	9	61	Decimal point in position 63
12	Centroid longitude	11	70	Signed, decimal in position 74
13	Delimiter	1/2	81	Carriage return/line feed, line feed or nothing

Block Record Layout

Block Dime File Record Layout

Column	Description	Width	Pos	Notes
1	Left State Code	2	1	
2	Left County Code	3	3	
3	Left Census Tract Code	4	6	
4	Left Tract Suffix	2	10	
5	Left Census Block	4	12	
6	Right State Code	2	16	
7	Right County Code	3	18	
8	Right Census Tract Code	4	21	
9	Right Tract Suffix	2	25	
10	Right Census Block	4	27	
11	From Latitude	8	31	Unsigned, 6 implied decimal places
12	From Longitude	9	39	Unsigned, 6 implied decimal places
13	To Latitude	8	48	Unsigned, 6 implied decimal places
14	To Longitude	9	56	Unsigned, 6 implied decimal places
15	Delimiter	1/2	65	Carriage return/line feed, line feed or nothing

Block Inventory Files

Column	Description	Width	Pos	Notes
1	State FIPS code	2	1	
2	County FIPS code	3	3	
3	Census Tract code	4	6	
4	Tract Suffix	2	10	
5	Block code	4	12	For Census2000 this format has changed to 4 digit numeric from 3 digit 1 alpha.
6	Blanks	3	16	
7	State abbreviation	2	19	
8	County name	28	21	
9	Area calculation	11	49	Decimal point in position 56
10	Blank	1	60	
11	Centroid latitude	9	61	Decimal point in position 63
12	Centroid longitude	11	70	Signed, decimal in position 74
13	Delimiter	1/2	81	Carriage return/line feed, line feed or nothing

Place Record Layout

Place Dime File Record Layout

Column	Description	Width	Pos	Notes
1	Left State Code	2	1	
2	Left County Code	3	3	
3	Left Place Code	5	6	
4	Blank	5	11	
5	Right State Code	2	16	
6	Right County Code	3	18	
7	Right Place Code	5	21	
8	Blank	5	26	
9	From Latitude	8	31	Unsigned, 6 implied decimal places
10	From Longitude	9	39	Unsigned, 6 implied decimal places
11	To Latitude	8	48	Unsigned, 6 implied decimal places
12	To Longitude	9	56	Unsigned, 6 implied decimal places
13	Delimiter	1/2	65	Carriage return/line feed, line feed or nothing

Place Inventory Files

Column	Description	Width	Pos	Notes
1	State FIPS code	2	1	
2	County FIPS code	3	3	
3	FIPS Place code	5	6	
4	Blank	1	11	
5	State abbreviation	2	12	
6	County name	28	14	
7	Place name	40	42	
8	Area calculation	11	82	Decimal point in position 89 Fmt(^^^^^^#.###)
9	Blank	1	93	
10	Centroid latitude	9	94	Decimal point in position 96 Fmt(##.######)
11	Centroid longitude	11	103	Signed, decimal in position 107 Fmt(-###.###### or ^-##.######)
12	Delimiter	1/2	114	Carriage return/line feed, line feed or nothing

MCD Record Layout

MCD Dime File Layout

Column	Description	Width	Pos	Notes
1	Left State Code	2	1	
2	Left County Code	3	3	
3	Left MCD Code	5	6	
4	Blank	5	11	
5	Right State Code	2	16	
6	Right County Code	3	18	
7	Right MCD Code	5	21	
8	Blank	5	26	
9	From Latitude	8	31	Unsigned, 6 implied decimal places
10	From Longitude	9	39	Unsigned, 6 implied decimal places
11	To Latitude	8	48	Unsigned, 6 implied decimal places
12	To Longitude	9	56	Unsigned, 6 implied decimal places
13	Delimiter	1/2	65	Carriage return/line feed, line feed or nothing

MCD Inventory Files

Column	Description	Width	Pos	Notes
1	State FIPS code	2	1	
2	County FIPS code	3	3	
3	FIPS MCD code	5	6	
4	Blank	1	11	
5	State abbreviation	2	12	
6	County name	28	14	
7	MCD name	40	42	
8	Area calculation	11	82	Decimal point in position 89 Fmt(^^^^^^#.###)
9	Blank	1	93	
10	Centroid latitude	9	94	Decimal point in position 96 Fmt(##.######)
11	Centroid longitude	11	103	Signed, decimal in position 107 Fmt(-###.###### or ^-##.######)
12	Delimiter	1/2	114	Carriage return/line feed, line feed or nothing

Appendices 7

In This Section

- *State Abbreviations and FIPS Codes*
- *Available Bufferless Counties*

State Abbreviations and FIPS Codes

See State and County FIPS Codes and Abbreviations on this Documentation CD.

Available Bufferless Counties

The following is a list of states and counties that have "without shoreline buffer coverages" available.

FIPS	State Abbreviation	County Name
01003	AL	Baldwin
01097	AL	Mobile
02013	AK	Aleutians East
02016	AK	Aleutians West
02020	AK	Anchorage
02050	AK	Bethel
02060	AK	Bristol Bay
02070	AK	Dillingham
02100	AK	Haines
02110	AK	Juneau
02122	AK	Kenai Peninsula
02130	AK	Ketchikan Gateway
02150	AK	Kodiak Island
02164	AK	Lake & Peninsula
02170	AK	Matanuska-Susitna
02180	AK	Nome
02185	AK	North Slope
02188	AK	Northwest Arctic
02201	AK	Prince of Wales
02220	AK	Sitka
02232	AK	Skagway-Hoonah-Angoon
02261	AK	Valdez-Cordova
02270	AK	Wade-Hampton
02280	AK	Wrangell-Petersburg
02282	AK	Yakutat
06001	CA	Alameda
06013	CA	Contra Costa
06015	CA	Del Norte
06023	CA	Humboldt
06037	CA	Los Angeles
06041	CA	Marin
06045	CA	Mendocino
06053	CA	Monterey
06059	CA	Orange
06073	CA	San Diego
06075	CA	San Francisco
06079	CA	Sanluis Obispo

06081	CA	San Mateo
06083	CA	Santa Barbara
06085	CA	Santa Clara
06087	CA	Santa Cruz
06095	CA	Solano
06097	CA	Sonoma
06111	CA	Ventura
09001	CT	Fairfield
09007	CT	Middlesex
09009	CT	New Haven
09011	CT	New London
10001	DE	Kent
10003	DE	New Castle
10005	DE	Sussex
12005	FL	Bay
12009	FL	Brevard
12011	FL	Broward
12015	FL	Charlotte
12017	FL	Citrus
12021	FL	Collier
12029	FL	Dixie
12031	FL	Duval
12033	FL	Escambia
12035	FL	Flagler
12037	FL	Franklin
12045	FL	Gulf
12053	FL	Hernando
12057	FL	Hillsborough
12061	FL	Indian River
12065	FL	Jefferson
12071	FL	Lee
12075	FL	Levy
12081	FL	Manatee
12085	FL	Martin
12086	FL	Miami-Dade
12087	FL	Monroe
12089	FL	Nassau
12091	FL	Okaloosa
12099	FL	Palm Beach
12101	FL	Pasco
12103	FL	Pinellas
12109	FL	St Johns
12111	FL	St Lucie
12113	FL	Santa Rosa
12115	FL	Sarasota
12123	FL	Taylor
12127	FL	Volusia
12129	FL	Wakulla
12131	FL	Walton
13029	GA	Bryan
13039	GA	Camden
13051	GA	Chatham
13127	GA	Glynn
13179	GA	Liberty
13191	GA	Mcintosh
15001	HI	Hawaii

15003	HI	Honolulu
15005	HI	Kalawao
15007	HI	Kauai
15009	HI	Maui
17031	IL	Cook
17097	IL	Lake
18089	IN	Lake
18091	IN	La Porte
18127	IN	Porter
22023	LA	Cameron
22045	LA	Iberia
22051	LA	Jefferson
22057	LA	Lafourche
22071	LA	Orleans
22075	LA	Plaquemines
22087	LA	St Bernard
22101	LA	St Mary
22103	LA	St Tammany
22109	LA	Terrebonne
22113	LA	Vermilion
23005	ME	Cumberland
23009	ME	Hancock
23013	ME	Knox
23015	ME	Lincoln
23023	ME	Sagadahoc
23027	ME	Waldo
23029	ME	Washington
23031	ME	York
24003	MD	Anne Arundel
24005	MD	Baltimore
24009	MD	Calvert
24011	MD	Caroline
24015	MD	Cecil
24017	MD	Charles
24019	MD	Dorchester
24025	MD	Harford
24029	MD	Kent
24033	MD	Prince Georges
24035	MD	Queen Annes
24037	MD	St Marys
24039	MD	Somerset
24041	MD	Talbot
24045	MD	Wicomico
24047	MD	Worcester
24510	MD	Baltimore City
25001	MA	Barnstable
25005	MA	Bristol
25007	MA	Dukes
25009	MA	Essex
25017	MA	Middlesex
25019	MA	Nantucket
25021	MA	Norfolk
25023	MA	Plymouth
25025	MA	Suffolk
26001	MI	Alcona
26003	MI	Alger

26005	MI	Allegan
26007	MI	Alpena
26009	MI	Antrim
26011	MI	Arenac
26013	MI	Baraga
26017	MI	Bay
26019	MI	Benzie
26021	MI	Berrien
26029	MI	Charlevoix
26031	MI	Cheboygan
26033	MI	Chippewa
26041	MI	Delta
26047	MI	Emmet
26053	MI	Gogebic
26055	MI	Grand Traverse
26061	MI	Houghton
26063	MI	Huron
26069	MI	Iosco
26083	MI	Keweenaw
26089	MI	Leelanau
26095	MI	Luce
26097	MI	Mackinac
26099	MI	Macomb
26101	MI	Manistee
26103	MI	Marquette
26109	MI	Menominee
26115	MI	Monroe
26121	MI	Muskegon
26131	MI	Ontonagon
26139	MI	Ottawa
26141	MI	Presque Isle
26147	MI	St Clair
26153	MI	Schoolcraft
26157	MI	Tuscola
26159	MI	Van Buren
26163	MI	Wayne
27031	MN	Cook
27075	MN	Lake
27137	MN	St Louis
28045	MS	Hancock
28047	MS	Harrison
28059	MS	Jackson
33015	NH	Rockingham
33017	NH	Strafford
34001	NJ	Atlantic
34005	NJ	Burlington
34009	NJ	Cape May
34011	NJ	Cumberland
34013	NJ	Essex
34017	NJ	Hudson
34023	NJ	Middlesex
34025	NJ	Monmouth
34029	NJ	Ocean
34033	NJ	Salem
34039	NJ	Union
36005	NY	Bronx

36011	NY	Cayuga
36013	NY	Chautauqua
36029	NY	Erie
36045	NY	Jefferson
36047	NY	Kings
36055	NY	Monroe
36059	NY	Nassau
36061	NY	New York
36063	NY	Niagara
36075	NY	Oswego
36081	NY	Queens
36085	NY	Richmond
36089	NY	St Lawrence
36103	NY	Suffolk
36117	NY	Wayne
36119	NY	Westchester
37013	NC	Beaufort
37015	NC	Bertie
37019	NC	Brunswick
37029	NC	Camden
37031	NC	Carteret
37041	NC	Chowan
37049	NC	Craven
37053	NC	Currituck
37055	NC	Dare
37073	NC	Gates
37091	NC	Hertford
37095	NC	Hyde
37129	NC	New Hanover
37133	NC	Onslow
37137	NC	Pamlico
37139	NC	Pasquotank
37141	NC	Pender
37143	NC	Perquimans
37177	NC	Tyrrell
37187	NC	Washington
39007	OH	Ashtabula
39035	OH	Cuyahoga
39043	OH	Erie
39085	OH	Lake
39093	OH	Lorain
39095	OH	Lucas
39123	OH	Ottawa
39143	OH	Sandusky
41007	OR	Clatsop
41011	OR	Coos
41015	OR	Curry
41019	OR	Douglas
41039	OR	Lane
41041	OR	Lincoln
41057	OR	Tillamook
42049	PA	Erie
44001	RI	Bristol
44003	RI	Kent
44005	RI	Newport
44007	RI	Providence

44009	RI	Washington
45013	SC	Beaufort
45019	SC	Charleston
45029	SC	Colleton
45043	SC	Georgetown
45051	SC	Horry
45053	SC	Jasper
48007	TX	Aransas
48039	TX	Brazoria
48057	TX	Calhoun
48061	TX	Cameron
48071	TX	Chambers
48167	TX	Galveston
48201	TX	Harris
48239	TX	Jackson
48245	TX	Jefferson
48261	TX	Kenedy
48273	TX	Kleberg
48321	TX	Matagorda
48355	TX	Nueces
48391	TX	Refugio
48409	TX	San Patricio
48489	TX	Willacy
51001	VA	Accomack
51036	VA	Charles City
51057	VA	Essex
51073	VA	Gloucester
51093	VA	Isle Of Wight
51095	VA	James City
51097	VA	King And Queen
51099	VA	King George
51101	VA	King William
51103	VA	Lancaster
51115	VA	Mathews
51119	VA	Middlesex
51127	VA	New Kent
51131	VA	Northampton
51133	VA	Northumberland
51149	VA	Prince George
51159	VA	Richmond
51181	VA	Surry
51193	VA	Westmoreland
51199	VA	York
51550	VA	Chesapeake
51650	VA	Hampton City
51700	VA	Newport News
51710	VA	Norfolk City
51735	VA	Poquoson City
51740	VA	Portsmouth
51800	VA	Suffolk City
51810	VA	Virginia Beach
53009	WA	Clallam
53027	WA	Grays Harbor
53029	WA	Island
53031	WA	Jefferson
53033	WA	King

53035	WA	Kitsap
53045	WA	Mason
53049	WA	Pacific
53053	WA	Pierce
53055	WA	San Juan
53057	WA	Skagit
53061	WA	Snohomish
53067	WA	Thurston
53069	WA	Wahkiakum
53073	WA	Whatcom
55003	WI	Ashland
55007	WI	Bayfield
55009	WI	Brown
55029	WI	Door
55031	WI	Douglas
55059	WI	Kenosha
55061	WI	Kewaunee
55071	WI	Manitowoc
55075	WI	Marinette
55079	WI	Milwaukee
55083	WI	Oconto
55089	WI	Ozaukee
55101	WI	Racine