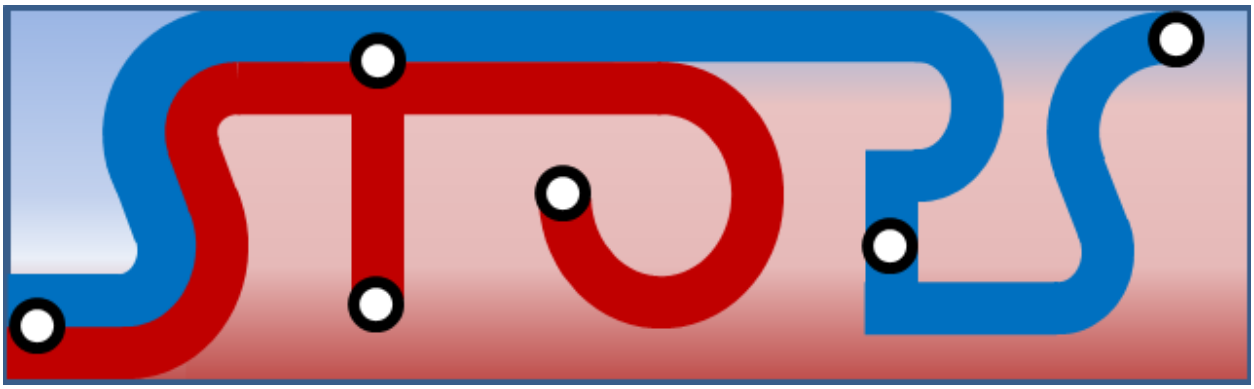
User Guide

STOPS
Simplified Trips-on-Project Software



Version 1.50

Prepared for:

Federal Transit Administration

1200 New Jersey Avenue, SE

Washington, DC 20590

Prepared by:

RSG

2200 Wilson Boulevard

Arlington, VA 22101

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1. Introduction

The Simplified Trips-on-Project Software (STOPS) is a series of programs designed to estimate transit project ridership using a streamlined set of procedures that bypass the time-consuming process of developing and applying a regional travel demand forecasting model.

STOPS is quite similar in structure to regional models and includes many of the same computations of transit level-of-service and market share found in model sets maintained by Metropolitan Planning Organizations. What makes STOPS much simpler to use than regional models is the following:

1. Estimates of total origin-to-destination travel are derived from Census data rather than elaborate trip generation and destination choice procedures. This avoids the need to calibrate these tools to the degree of accuracy required to estimate transit ridership.

2. Representations of transit levels-of-service are derived from timetable information, bypassing the need to develop detailed transit networks in the planning environment. Timetable information is already available at most agencies and is much more accurate than the representations of travel time and frequencies contained in typical planning networks.

3. The model calibrates itself to represent current conditions. This means that the months, and sometimes years, that are spent developing and documenting effective forecasting tools can be avoided.

Although STOPS represents a significant simplification over existing procedures, it still requires careful development of input information that describes existing transit ridership, existing transit schedules and future transit service scenarios. This document describes the process that should be followed to install STOPS, develop input data, and run the STOPS model to generate estimates of trips on transit projects.

This document describes Version 1.50 of STOPS. This version is similar in operation to prior releases but is designed to generate more accurate results due to the following major changes:

- Non-home based trip procedures have been refined based on experience with STOPS 1.01 and 1.02 which generated more NHB transit trips in large central business districts than actually occur.

- The number of separate GTFS directories that can be combined in a single STOPS run has been increased from 4 to 20.

- Schedule-based path-building has been updated so that trips are scheduled to reach the destination at a specific time (e.g., arrive at work by 8:00 am) rather than depart the origin at a specific time (e.g., depart home at 7:30). Although similar for shorter trips, the arrival time approach works much better for very long trips in which the traveler may need to leave home by 6:00 am to reach work by 8:00 am.

- Path-building was also updated so that each interchange has a different arrival time rather than having all interchanges use a single time. This variation in arrival times is designed to

reflect the fact that different travelers may need to arrive at work at different times. This change results in more robust estimate of trips-on-project that are less dependent on a single (and arbitrary) assumed arrival time.

- Wait time estimates have been updated to reflect the scheduled difference between arrival time and either the time the traveler wishes to be at the destination or the departure time of the next vehicle. This computation replaces the process that uses station-to-station frequencies to estimate the average waiting time.

- The model calibration has been updated to reflect actual experience with multiple cities with new fixed guideway systems.

- New capabilities have been added to represent impedances for fixed guideway stations (and other stops) including:

    - Stations can accept additional values of STOPSType to indicate the number of levels between the street and platform that corresponds to the additional walking time required to reach the actual bus stop or train platform.

    - Additional time can added to represent station impedance. This capability is provided by adding optional fields to the station file that specify additional time for walk access, kiss-and ride access, park-and-ride access, and transfers (separately for connecting stops in the same GTFS file set or directory or a different GTFS file set). These times can be used to:

        - Represent the additional time required to use transit beyond that represented by simple straight-line distances implied by the latitude and longitude or the degree of grade separation
        - Represent the impact that fare policy may have on the desirability of specific transit services
        - Account for usage patterns as revealed by actual ridership

    - STOPS now can read the GTFS transfers.txt file (if provided) to code (or prevent) specific station-to-station transfer times. The values coded in transfers.txt override the times in the station file.

    - Park-and-Ride lots can be coded with a time parameter used to represent the additional time required to travel from a parked car to the transit platform. This capability allows the user to more accurately represent the time required to park a car and walk to transit. It also can be used to institute parking capacity-based shadow pricing.

- STOPS has been enhanced to simplify the process of coding of BRT facilities. STOPS now reports project ridership for bus routes and bus "stations" (BRT bus stops) and it is not necessary to code BRT routes as fixed guideway routes. Note, however, that it may still be desirable to code BRT as a fixed guideway route if the BRT operates on a separate right-of-way.

- Redefined the Fixed Guideway Visibility Factor so that nearly all fixed guideway projects can use the full amount (1.0). In earlier versions, only Heavy Rail systems were coded with

1.0. LRT and commuter rail systems were coded with 0.5 and some streetcars were coded with lower values. With version 1.5, only those streetcars or BRT routes that are partially in a mixed traffic should be coded with a visibility factor less than 1.0.

- Revised the process used to identify project trips in cases where the project may be used by bus or rail customers who neither board nor alight at a project station. With Version 1.50, only new project stations need to be identified. Any trip boarding, alighting, or passing through the station will be identified even if the trip neither boards nor alights at an identified station.

- Revised the recommended practices for coding station groups.

- Added the capacity to process split Traffic Analysis Zones, Tracts, or Block Groups.

- Increased the maximum problem size that STOPS can handle. Current limits are:

    - Number of TAZs (or tracts or block groups depending on Census Geography) is 9,000.
    - Number of stations (or bus stops identified as stations) with counts that can be used for station group calibration is now 10,000.
    - Number of new stations (or other stations where station-to-station flows are reported) is now 250.
    - Number of station groups for station group-to-station group reporting (can include stations that are not separately reported in the station-to-station fields) is now 250.
    - Number of GTFS files sets for each scenario is now 20.

- Added a new transit route statistics report (Tables 10.03 and 10.04 in the STOPS report file) to show revenue mile and hour operating statistics for each operated route for the time spans used for simulating peak and midday periods. This report is designed to identify large and unintended changes in operating assumptions between the existing, no-build, and build scenarios.

- Revised the effects of the visibility factor on mode-specific constants (parameters which affect the choice of path-type and access mode for each auto ownership) and nesting constants so that a fixed guideway visibility factor of 0.1 applied to a fixed guideway project generates a similar number of trips-on-project as the same service coded as a bus.

- Added a new "Group Calibration Approach" option to the STOPS parameter screen that allows the user to control the station calibration process. In earlier versions of STOPS, station group calibration was always invoked so that STOPS adjusted both mode-specific choice constants and trip factoring to match existing station group ridership. This factor was computed for the existing scenario in the current year and then applied to the no-build and build scenarios for the horizon year. With Version 1.5, the default is changed so that no station calibration is performed automatically. The user can select from among several new optional procedures for implementing station group calibration if this functionality is desired. See Section 4.8.5 for more information.

Version 1.50 Changes Affecting Setups from Earlier Versions:

The STOPS setups from earlier versions can be used with Version 1.5 with only a few items that require review and modification:

1. The STOPS Fixed Guideway visibility factor should be set to 1.0 for all types of fixed guideway transit.

2. Stations with a STOPS Type code indicating grade separation (STOPSType greater than 2) separation should be reviewed to identify the degree of vertical separation between the station platform and the street.

3. Stations groups should be redefined so that new stations are given different groups from existing stations. Station groups for existing stations should be defined so that similar stations (in terms of location, routes, and markets) are grouped together.

4. It is no longer necessary (but still allowed) to set NewStation values "2" and "3" to indicate fixed guideway stops on either side of a "gap-filler" project. With Version 1.50, users need only code a "1" for the stations that are part of a project. See Section 4.2 (and the footnote for the NewStation code) for advice on coding a gap-filler project that has no new station.

5. Some internal working files have a different structure with Version 1.5. Be sure to re-run all batch steps (Step 11, all elements) the first time Version 1.5 is run with an existing STOPS setup.

6. The default type of station group calibration has changed from full station group factoring to no station group calibration. The user can select station group calibration type 9 to have STOPS apply a similar type of station group calibration to that employed in previous version. See Section 4.8.5 for more details.

The remainder of this document describes the STOPS model, how it is installed, how it can be used to generate estimates of fixed guideway ridership, and the output reports that it generates.

2. Overview of STOPS and Its Application

This section describes the STOPS model and provides guidance on its application.

2.1 STOPS Model Structure

STOPS is designed to estimate fixed guideway transit trips on a project using readily available data and procedures that are calibrated to match both local and national experience related to rail and BRT ridership. STOPS is similar, in concept, to traditional trip-based four-step travel forecasting models. This structure is more complex than a simple direct-generation model so that STOPS can discern project ridership in a wide range of situations including:

- A fixed guideway starter line
- An extension to an existing fixed guideway line
- A new line added to an existing fixed guideway system
- A gap-filler project in which a new segment connects two previously separated fixed guideway systems

To be able to measure project ridership in all of these situations, STOPS includes the capability to represent the transit system and the project definition so that trips can be identified that benefit from the investment in new fixed guideway services.

In STOPS, person trip tables (i.e., the results of Steps 1 and 2 of traditional four-step models) are developed from Year 2000 Census Transportation Planning Package (CTPP) Journey-to-Work (JTW) flows that are updated to account for current and future year demographic growth. Transit timetable data from local General Transit Feed Specification (GTFS) files are used to develop zone-to-zone transit, access, and waiting times. A traditional nested logit mode choice model computes the transit shares stratified by access mode (walk, kiss-and-ride, and park-and-ride) and sub-mode (fixed guideway-only, fixed guideway and bus, and bus-only).

An overview of STOPS is presented in Figure 1.

Similar to nearly all multi-modal travel forecasting models, STOPS has three parallel tracks:

- ***Highway supply.*** The left column in the flow chart represents information about the highway system in the region. STOPS does not directly process information on highway attributes and instead relies on estimates of zone-to-zone highway travel times and distances obtained from regional travel forecasting model sets maintained by Metropolitan Planning Organizations (MPOs). Since MPO models might not still use the same geographic (zone) system used in the CTPP, STOPS includes a procedure to convert MPO geography to CTPP geography.

Note that although STOPS allows (and requires) the user to have separate Census and MPO zone systems, all geographic files MUST be coded with longitude and latitude coordinates consistent with files prepared by the U.S. Census Bureau. Any geographic file obtained from an MPO that is specified in State Plane Coordinates must be converted to longitude and latitude coordinates prior to use with STOPS.

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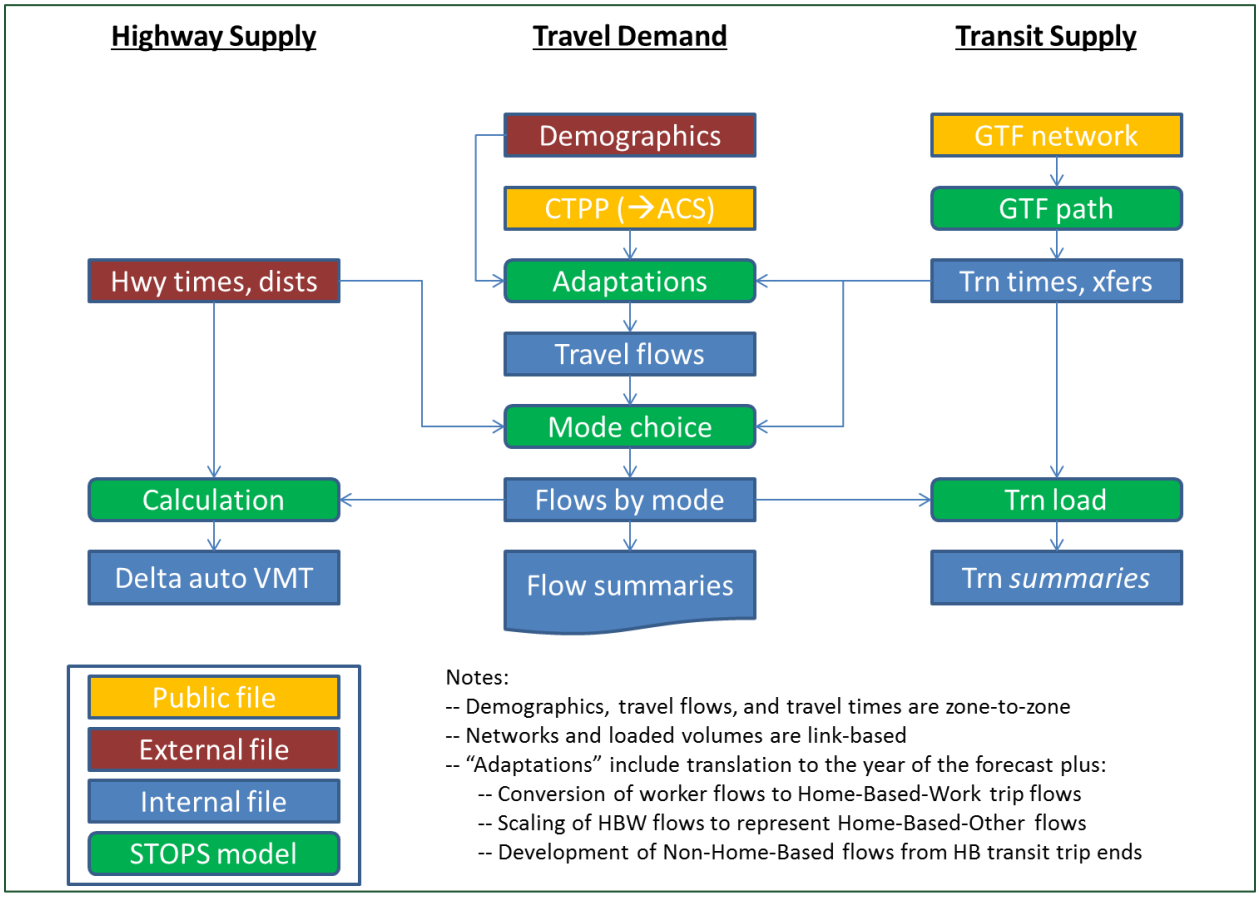


Figure 1. STOPS Application Flow Chart

- ***Transit supply.*** The right column represents information about the transit system. Like traditional models, transit network characteristics are used to build zone-to-zone level of service (skim) matrices and load transit trips to determine ridership by route and station. Unlike traditional forecasting models, STOPS does not use elaborate hand-coded networks. Instead, STOPS takes advantage of a recent advance in on-line schedule data—the General Transit Feed Specification (GTFS). This data format is a commonly-used format for organizing transit data so that on-line mapping programs can help customers find the optimal paths (times, routes, and stop locations) for their trips. STOPS includes a program known as GTFPath that generates the shortest path between every combination of regional origin and destination. This path is used for estimating travel times (as an input to mode choice) and for assigning transit trips (an output of mode choice) to routes and stations.

- ***Travel Demand.*** The central column represents the demand side of STOPS. STOPS uses Year 2000 CTPP JTW data to estimate zone-to-zone demand for travel (i.e., travel flows) as an input to the models that determine the mode of travel. This data is adapted to represent current and future years by using MPO demographic forecasts to account for zone-specific

growth in population and employment. A traditional nested logit mode choice model is used to determine the proportion of trips utilizing transit stratified by access mode and transit sub-mode. Results of mode choice are summarized in a series of district-to-district flow tables.

2.2 Suggested Application Approach

STOPS is designed to simplify the process of developing and applying travel forecasting procedures while maintaining much of the internal sophistication of regional travel forecasting models. Nevertheless there are still a number of implementation and application steps that must be followed to successfully use STOPS to estimate fixed guideway transit ridership.

In order to streamline the process of applying STOPS, the user may wish to employ an incremental approach that breaks the STOPS application down into a series of simple steps including:

- Implement STOPS on the user's computer.

- Run STOPS for the current year and existing transit services and test the local model calibration. This step tests the local calibration of STOPS with existing transit services and current socioeconomic conditions in the corridor. STOPS is fundamentally organized around three separate transit service scenarios—(1) the existing, (2) the no-build, and (3) the build conditions. A current year / existing transit scenario run can be created by configuring all three scenarios so that they represent the existing transit schedule.

- Determine the characteristics of transportation system if the project is not built (i.e., the no-build scenario). This scenario is used as a point of comparison for the purpose of computing incremental transportation impacts such as the change in VMT. After defining no-build schedules, STOPS can use this information in the no-build and build scenarios to confirm that the no-build is properly defined.

- Code the full project in the build network and run STOPS for the current year with all three scenarios—existing, no-build, and build. This step will generate current year project ridership, a key input to the New Starts reporting process.

- If optional future year forecasts are desired, the user can develop future year demographic data and run STOPS for the forecast year. The result of this step is optional future year project ridership.

2.3 Input Data

STOPS is designed to make use of pre-existing data sources on transportation supply and demand for nearly all aspects of the ridership forecasting process. The only information that must be created specifically for a STOPS application are transit timetables (in GTFS format) representing the no-build and build scenarios.

Data are obtained from four sources:

- ***Federal Transit Administration:*** The FTA STOPS website includes copies of the CTPP data used by STOPS. Data is organized by state, and users can download one or more states to represent travel patterns in their corridor. Data in each state file include geographic files in ESRI shape file format describing Census Traffic Analysis Zones, Block Groups, or Tracts

(depending on the geographic unit of analysis of CTPP data in the project corridor), Census Blocks, and Parts I, II, and III of the CTPP.

- ***Local Transit Agencies.*** Transit timetables in GTFS format for existing conditions.

- ***Metropolitan Planning Organizations.*** Geographic files in ESRI shape file format describing the agency's traffic analysis zone system with information on zone number and current and forecast year population and employment by zone. MPOs also provide zone-to-zone estimates of highway time and distance for the current and forecast year.

- ***Project Sponsors.*** Project definition include station locations, station grade level (i.e., at grade or grade-separated), station presence or absence of park-and-ride, and operating plan at a sufficient level of detail to synthesize a transit schedule for the new service.

2.4 Computer Resources

STOPS is designed to run on a computer running a 32- or 64-bit version of Microsoft Windows such Version 7, or Version 8. At least 4GB of installed memory is required and 8GB is recommended.

STOPS generates large tables of zone-to-zone travel times and output summary files. The size of these files is related to the number of zones contained in the metropolitan area's Census Traffic Analysis Zone (TAZ) system[1] and the number of different forecast years that are generated. In practice the storage required for each scenario ranges from 20 GB to 100 GB. A USB external hard drive is recommended for storing scenario results and can also be used for running STOPS.

STOPS uses ESRI Shape files to describe the geographic relationships between Census TAZs (or block groups or tracts, depending on the availability of CTPP data), MPO TAZs, and station locations. The user should have access to Geographic Information System (GIS) software to update these files to define station locations and zonal district aggregations. Any GIS software that can read ESRI Shape files can be used; however, STOPS automates the linkage to two of the most common GIS packages used in transportation analysis and modeling: TransCAD Version 5.0/6.0. and ArcMap Version 10.1.

2.5 Skill Requirements

STOPS is designed for use by technical staff with a basic understanding of the principles of travel forecasting and model application. Skill requirements include:

- Experience using one or more GIS packages and the ability to create GIS layers in ESRI shape file format representing station locations and MPO zone systems.

- Understanding of the mechanics of travel forecasting including the concept of a "run", the types of data used as input to the travel forecasting process, and techniques for reviewing model outputs.

- Familiarity with the regional transit system including the different agencies providing service and the nature of the scheduled service in the region.

[1] In some cases (explained later in the document) Census Block Groups or Tracts are used in place of Census Zones. No matter which geographic unit of analysis is selected, the required hard drive space is a function of the number of these units.

2.6 Time Requirements

STOPS is designed to dramatically reduce the time required to prepare forecasts of transit trips on a project. The existing process required to prepare a fully operational local transit forecasting model often exceeds a year if the full range of model development activities is required. These steps include a comprehensive transit passenger survey, model calibration, and refinements required to generate a reasonable representation of existing transit patterns while conforming to best practices regarding model structure and parameters.

By contrast, STOPS utilizes data from a variety of sources to represent travel flows and transit supply, bypassing the need to calibrate these challenging model elements. It utilizes relatively conventional procedures for estimating mode shares and then calibrates these results to match estimated home-to-work transit shares attracted to each zone (from the CTPP), local regional transit boardings (from the National Transit Database or other sources), and station level (aggregated to groups) ridership data in cities where fixed guideway transit is already present.

STOPS requires carefully-developed input information and this data takes time to obtain and prepare. In general, STOPS can be used to generate estimates of project ridership within the following timeline:

- Prepare data and run model for current/existing conditions—1 to 2 weeks. In some regions, all information required to run STOPS is available on-line and 1 to 2 days are required to download the data files and reformat these data to the structure expected by STOPS. In other areas, these data must be obtained from transit agencies and MPOs and a greater amount of time will be required to request and obtain the needed input files.

- Developing data for build scenarios—1 to 2 weeks. The amount of time required to prepare a build scenario will depend on the complexity of the alternative. A new fixed guideway line that is introduced into a corridor with relatively minor changes to the local bus service can be coded in as little as a day. A more complex project in which a new fixed guideway line is integrated into an existing system with significant changes to feeder and/or competing bus lines could take up to a week to code.

- Running STOPS—3-8 hours. STOPS, itself, is fairly fast. Even for relatively large transit systems such as King County Metro and Sound Transit in Seattle, STOPS can be run in 3 hours.

- Reviewing results – 1 to 2 weeks. As is true of any forecasting application, the time spent reviewing results is a critical part of the process of generating ridership forecasts. At least a day should be anticipated for reviewing every aspect of the forecasting process including both the characteristics of the transportation supply and transit demand to make sure that every aspect of the model aligns with the intended definition of the project. STOPS may need to be re-run, if changes to the transportation supply, demographic forecasts, or calibration parameters are required. This process of code, run, and review may need to be repeated several times over the course of several weeks to generate a final estimate of trips on a transit project.

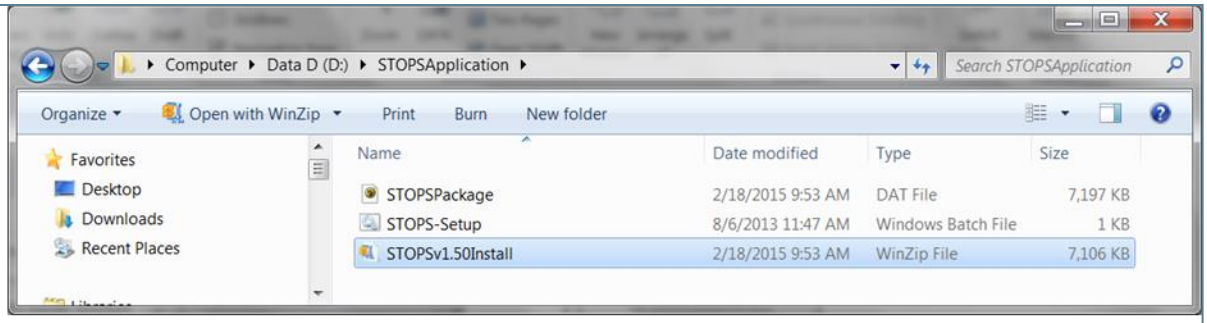
3. Installing STOPS Software

This section describes the steps required to install STOPS on a new computer.

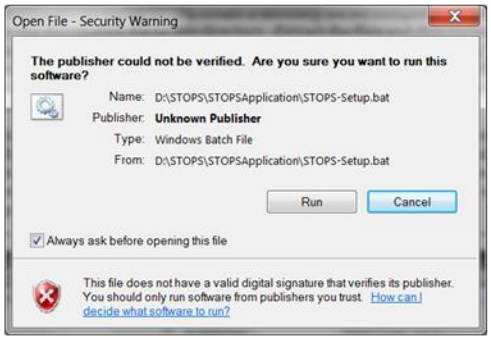
3.1 Installation Steps

STOPS can be downloaded from the FTA STOPS web page. The downloaded file is named STOPSv[9.99]Install.zip[2]. To install STOPS, create a directory on the computer where STOPS is to reside and copy the distribution file to this directory. Extract the contents of this zip file (STOPS_setup.bat and STOPSPackage.dat) to this directory and then double click on STOPS__setup.bat to complete the installation. The program extraction and setup process is illustrated in Figure 2. If the program is successfully installed, the STOPS program directory should have the application (STOPSMenu.exe) and two subdirectories (STOPSComponents and datatemplates). The user may want to create a short-cut to STOPSMenu.exe and copy it to the desktop for easy access to STOPS.

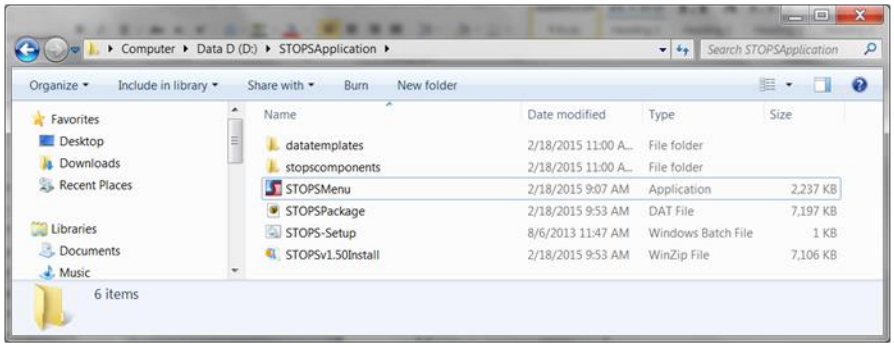
[2] 9.99 stands for the actual current version of STOPS, currently 1.50 at the time this manual was written.



1. Copy the STOPS install zip file to a user-defined directory that will hold the STOPS program. Unzip the contents – STOPSPackage.dat and STOPS-Setup.bat



2. Double-click on STOPS-setup. Click "Run" in response to the security warning.



3. When the STOPS-setup is complete, the program directory should appear as shown above

Figure 2. STOPS Program Setup Process

A zip file containing sample data is also available from the FTA Website. This zip file includes all of the information necessary to represent a fictional project in Seattle, WA. This folder can be unzipped to a location on the user's computer (e.g., j:\STOPSRun\SEA) and run to test the implementation of STOPS. The examples in this menu are mostly based on the results of this project so the reader can run this sample set to generate many of the examples on a local computer.

3.2 Specifying Automatic GIS Linkage

After the STOPS software is installed on the computer it should be opened by double clicking on the STOPSMenu Application (or the shortcut). The first time that STOPS is used after installation, the screen shown in Figure 3 appears.

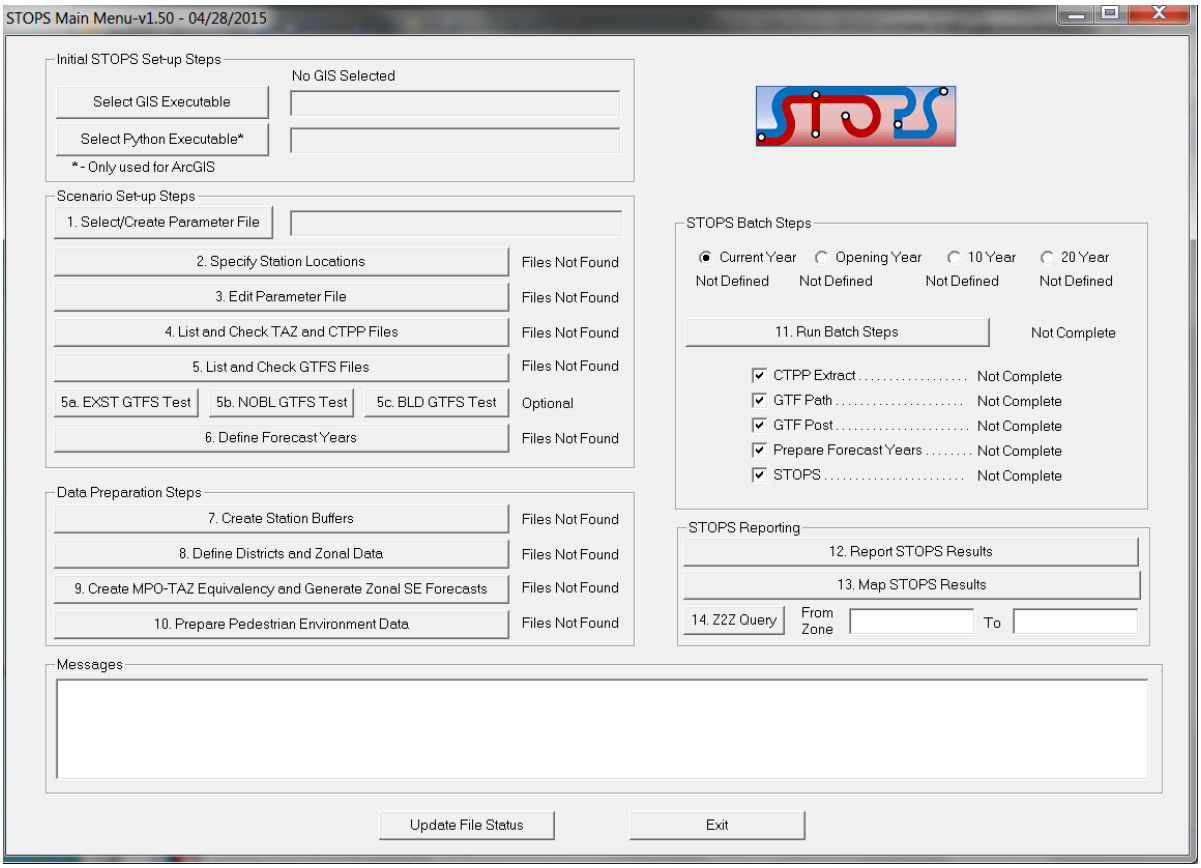


Figure 3. STOPS Main Menu When Opened the First Time

The message "No GIS Selected" appears at the top of the dialogue box to remind the user that no automatic GIS linkage has been defined. Until this is updated, that means that STOPS will prompt the user to manually edit station and district shape files.

To define an automatic GIS linkage, the user can click on the button "Select GIS Executable". When this is done, the standard windows file selection box appears as shown in Figure 4.

Use the file selection dialog to identify the location of one of the two files shown below:

- TransCAD executable – TCW.exe (typically located at C:\Program files (x86)\TransCAD\tcw.exe); or
- ArcMap executable – ArcMap.exe (typically located at C:\Program files (x86)\ArcGIS10.1\bin\ArcMap.exe))

After the GIS executable is selected, the message at the top of the dialogue changes to indicate that STOPS has been properly associated with one of the recognized GIS packages. Figure 5 shows the appearance of the Main Menu after STOPS is successfully associated with the TransCAD GIS package.

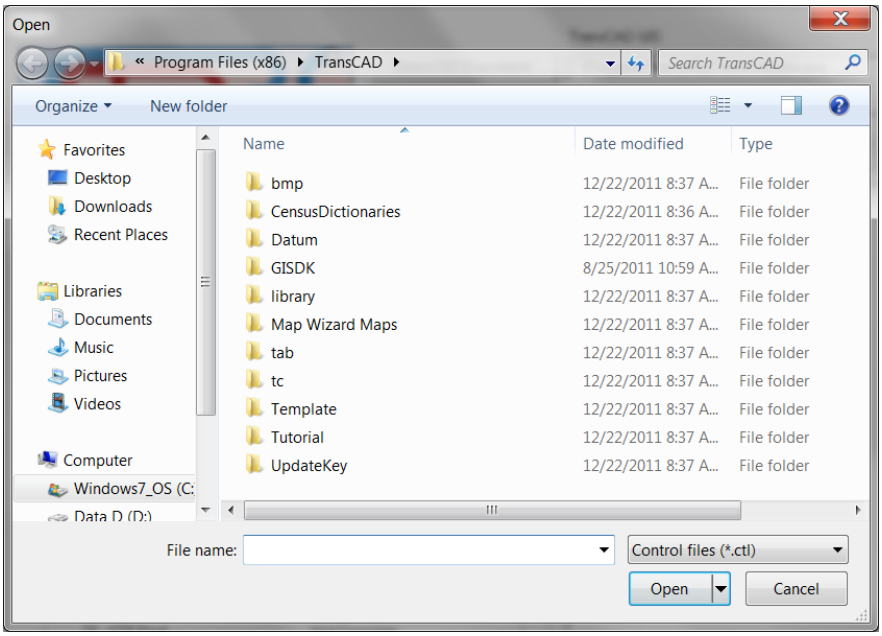


Figure 4. STOPS Dialog to Select GIS Executable

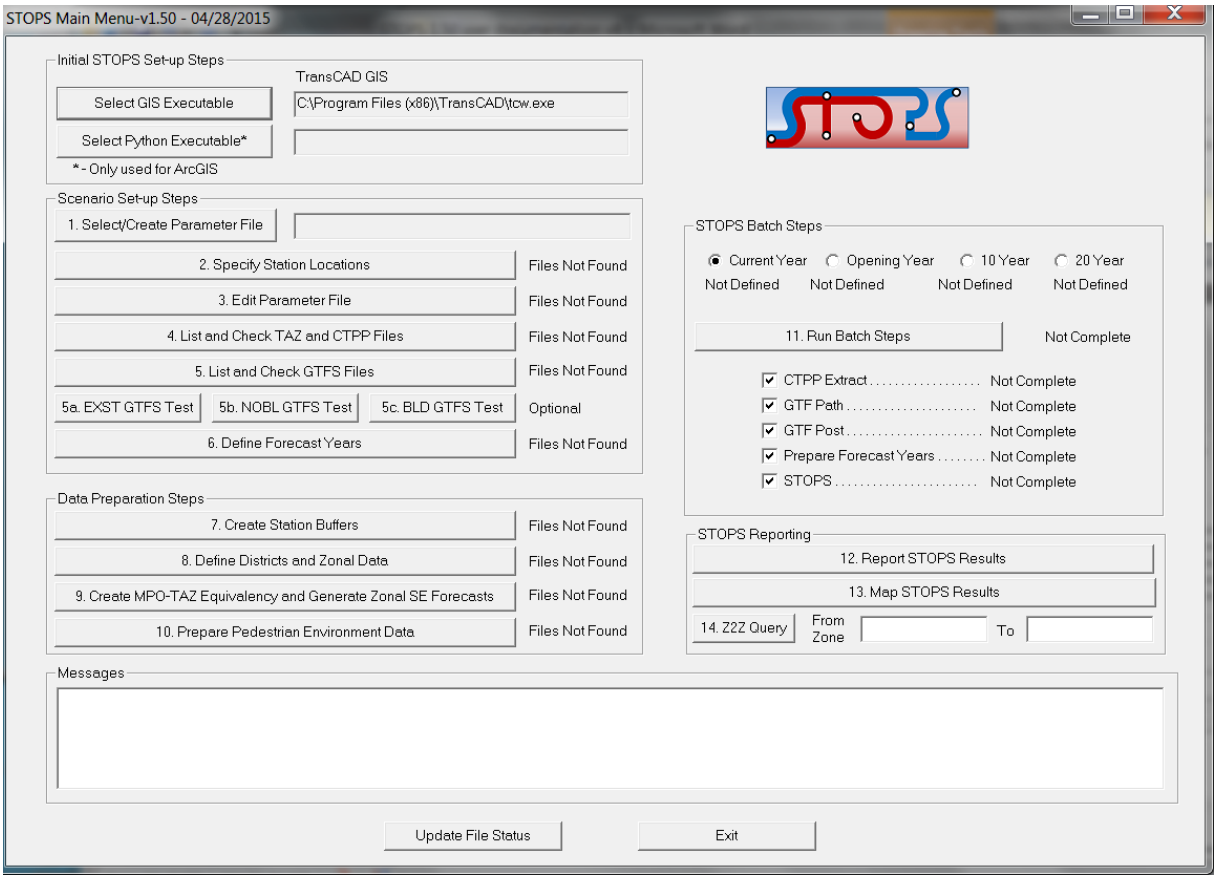


Figure 5. STOPS Main Menu After Selection of TransCAD GIS

Before TransCAD can be used in STOPS, it must be configured to allow it to open without using the quick start window and without warning the user if there is a second instance of TransCAD running. This is done by opening TransCAD and selecting the Edit > Preferences menu option. Unclick the start up and second instance warning options as shown in Figure 6.

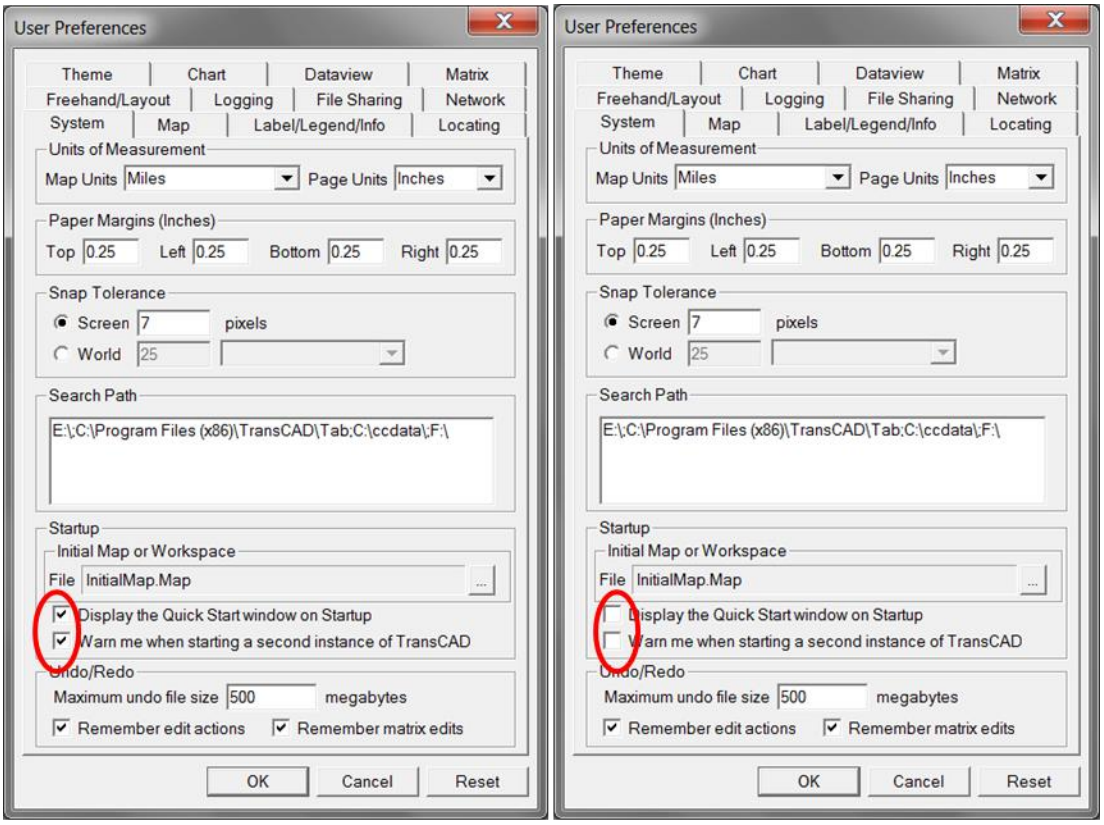


Figure 6. Setting TransCAD Quick Start and Second Instance Warning Options

If the user selects ArcMap, then the python executable file should also be defined. This program is named pythonw.exe and is typically installed at c:\python27\ArcGIS10.1\. When ArcMap is selected the appearance of the main menu is shown in Figure 7.

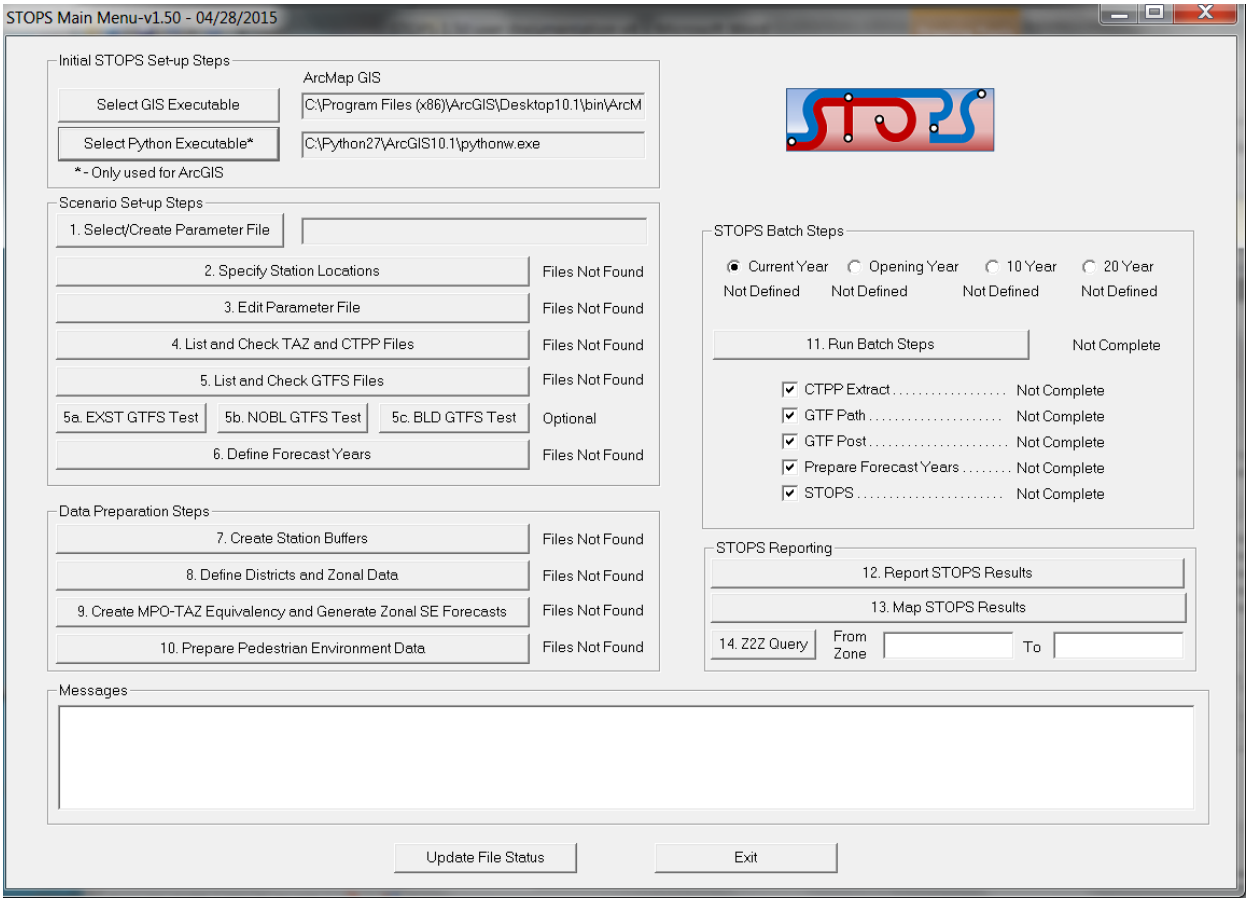


Figure 7. STOPS Main Menu After Selection of ArcMap GIS

In both TransCAD and ARCGIS, the user interface sets up the environment for the user to edit and display various data files. When editing is complete, the user must terminate the GIS using a menu command or clicking on the red "X" at the upper right hand corner of the screen. In some cases the GIS program will ask if it is OK to save the map (See Figure 8 for an example from TransCAD). The User should click "No" since the GIS system saves data as it is entered; this question is asking if it should save the map display settings which is not necessary since STOPS generates this information each time it is needed.

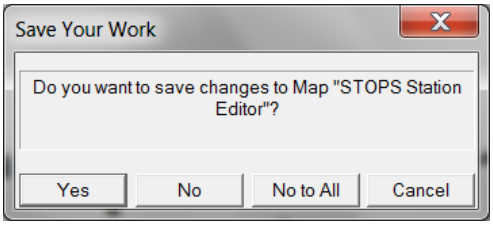


Figure 8. Click "No" in TransCAD Map Save Confirmation Dialog

4. Scenario Set-Up Steps

STOPS develops predictions of transit fixed guideway ridership based on the experiences of a wide variety of rapid transit, light rail transit, commuter rail, streetcar, and bus rapid transit systems built over the last 40 years in various cities across the United States. This experience is adapted to new settings according to:

- Year 2000 trip-making characteristics in the corridor as represented by the Year 2000 Census Transportation Planning Package (CTPP) Journey-to-Work (JTW) data sets.
- Information on the density of the street grid conveyed by Census Block definitions.
- Forecasted changes in population and employment from the Year 2000 to the current year and future forecast years that are prepared by local Metropolitan Planning Organizations (MPOs). MPO data is also used to characterize travel times on the regional highway system.
- Characteristics of the transit system as represented by automated schedule data and supplemental information on station characteristics, park and ride locations, and existing ridership.

Each source of data must be understood and, in many cases, prepared for use by STOPS. This chapter describes the various input data and the steps that must be taken to set-up a STOPS scenario and prepare data for use in generating forecasts of fixed guideway ridership.

At this stage in the process, the user needs to organize the analysis, collect data from FTA's STOPS webpage, obtain data on highway travel times and socioeconomic forecasts from the regional MPO, collect existing schedule data in GTFS format, and prepare information related to the transit project to be studied. In some cases (station locations and district definitions), STOPS, itself, is used to prepare input data. Other data (CTPP and Census Data) are downloaded and used "as-is." In other cases (GTFS scenario definitions), the user must create the input data using a text editor.

Before the user begins, several key decisions must be made based on the availability of Census data and local information that will streamline the process of setting up a STOPS run. These decisions include:

1. **What is the project corridor?** STOPS defines the project corridor as being all areas within 25 miles[3] of a ***project station*** <u>or</u> within 25 miles of ***existing fixed guideway transit stations*** that connect[4] to the project. It is a good idea to identify the location of existing and potential project fixed guideway stations prior to beginning the process of data assembly. To facilitate this process, the second step in setting up a STOPS run involves identifying station locations in a GIS. The user can use standard GIS functions to create a 25 mile buffer around the set of existing and future stations to create a GIS representation of the project corridor.

2. **What States and MPO regions are included in the project corridor?** CTPP data are organized around states and MPO regions so the next step is to identify the states and MPO regions that are included in the project corridor. This can be done by adding a state layer to

[3] Straight line distance
[4] "Connect" in this context means that transit passengers on the project may utilize the connecting service or that the other services will be helpful in calibrating STOPS. As a practical matter, this means that all or nearly all fixed guideway stations in a metropolitan area will be included in this definition of the project corridor. The only exception will occur in very large metropolitan areas where the inclusion of distant and not relevant stations may not be necessary.

the GIS view showing stations and buffers described above and then identifying all states that overlap the 25 mile buffer. MPO coverage can be determined by identifying the counties that are included in the buffer area and comparing this list to the MPO counties provided in Section 9.3.

3. **What geography type will be used in the analysis?** STOPS supports Census Traffic Analysis Zones (TZ), Census Block Groups (BG), and Census Tracts (TR) as the units of geographic analysis. Only one type of geography can be used in each scenario or model run. TZ or BG are the most detailed options but can only be used for situations where the entire corridor lies within a single MPO region[5] and the Census Bureau collected information at the TZ or BG (either one but not both) level throughout the corridor. A county-by-county listing of MPO areas and geography types appears in Section 9.3. ***If all of these conditions are met, then the user can select TZ or BG as the geography type. Otherwise, users must select TR as the geography type.***

4. **What years will be modeled?** STOPS allows the user to define up to four different application years.

    a. The current year is used in the local calibration element of the model and may also be used for forecasting. The current year must be supported with information on zonal population and employment and optional information on regional transit boardings, regional home-to-work linked transit trips, and fixed guideway station boarding counts.
    b. Optional forecast years include: opening year, 10-year, and 20-year forecasts and (if defined) require just population and employment data for each MPO zone in the corridor.

5. **What are the definitions of the existing, no-build, and build scenarios?** STOPS expects the user to define 3 distinct transportation scenarios:

    a. **Existing scenario (EXST).** The "EXST" scenario represents the existing transit system and is used with current year socioeconomic data to calibrate the local application of STOPS to observed current year ridership. The resulting calibration is applied to all other scenarios.

    b. **No-build scenario (NOBL).** The no-build scenario represents the future year network that is to be used as the basis of comparison for the project for any statistic requiring information on incremental impacts of the project (e.g., Vehicle Miles of Travel). The no-build scenario includes the existing system together with relevant transit elements that are already committed for construction and operation.

    c. **Build scenario (BLD-).** The build scenario represents conditions after the project fixed guideway transit system is constructed and in operation.

    STOPS requires information on the service plan, station locations and station characteristics for each transportation scenario. STOPS can, however, accept the same files for each alternative if, for example, the EXST and NOBL scenarios are identical.

[5] In some cases, a small portion of the corridor's expected ridership shed may lie outside of the MPO region. If the demand from this area is expected to be relatively small, it may be appropriate to ignore this area in favor of generating more detailed estimates in the portion of the corridor that is within the MPO boundary.

6. **How is automated schedule data structured in the corridor?** STOPS uses data organized in General (formerly Google) Transit Feed Specification (GTFS) format. Nearly every large transit agency in the United States has this data available and it is possible to convert manual schedule information into this format if the data is not already available. In some cities with multiple transit operators, each transit operator creates its own separate GTFS files. STOPS allows the user to combine up to four independent datasets to make up a regional schedule. STOPS introduces two extensions to the specification to allow the user to code Park-and-Ride (PNR) locations and to introduce simple changes to the GTFS files to represent new services.

It is useful to understand the STOPS directory structure which is shown in Table 1 . The STOPS project root directory can have any legal Windows name and can be a subdirectory to the drive's root directory or a subdirectory of any other folder. At the beginning of a run, the STOPS directory will only have one file, a parameter file, and a series of subdirectories. Both the parameter file and the directory structure are created by the STOPS program and no manual steps are required. As noted above, the user may copy sample data to a new folder and use this information as the basis for a STOPS run. In that case, STOPS will add the required additional directories.

The directory name is not strictly limited in length. However, the user should note that Windows may limit the length of file name (drive, directory, name, and extension) to 255 characters and many STOPS displays are not wide enough to display very long filenames. STOPS maximum suggested filename lengths are as follows:

- Maximum length of control file name (including drive letter, colon, directory names, backslashes, filename, and extension) is 80 characters and fewer than 40 characters are recommended.
- Maximum length of all GTFS subdirectory names (excluding the root directory or "inputs\") is 20 characters and under 10 characters is recommended. If more than 4 GTFS filesets are used, then even shorter directory names (i.e., 2-character codes) may be required.

STOPS periodically tests the lengths of key file names to confirm that the directory names will not generate file names lengths that are too long. Nevertheless, the user should keep file name lengths under these guidelines to minimize the chance of problems in later steps.

Table 1. STOPS Directory Structure

Directory	Example	Contents
STOPS project root	C:\STOPSProject\	Parameter (control) file
Inputs	C:\STOPSProject\Inputs\	Input data.
Logfiles	C:\STOPSProject\Logfiles\	STOPS program logfiles that determine the completion status of each step.
GTFS subdirectories of Inputs that contain information for a particular agency and/or scenario	C:STOPSProject\Inputs\[Dir 1]\ C:STOPSProject\Inputs\[Dir 2]\ C:STOPSProject\Inputs\[Dir 3]\ Etc.	GTFS schedule data for agency and scenario defined by Directory 1, Directory 2, Directory 3, etc. Note these directories are not created by STOPS; They are created by the user when a new GTFS file set is created for each agency and/or scenario. [Dir 1], [Dir 2], [Dir 3], etc., can be any user-defined Windows-supported subdirectory name.
Districts	C:\STOPSProject\Districts\	District definition
Scratch	C:\STOPSProject\Scratch\	Temporary working files that can be deleted by the user after each STOPS run is complete and checked.
Skims	C:\STOPSProject\Skims\	Output transit level-of-service matrices (often known as skim files)
GTFOutput	C:\STOPSProject\GTFOutput\	GTFS files created by STOPS from input information provided by User (accounts for edits performed by STOPS) for visualizing the built schedules.
STOPS	C:\STOPSProject\STOPS\	Empty directory that user can use to store STOPS-related files.
Reports	C:\STOPSProject\Reports\	STOPS and related output reports
OutputData	C:\STOPSProject\OutputData\	Mapable STOPS output data files and various outputs that can be used to understand the results of each STOPS run.

4.1 Defining the STOPS Run Parameters

The STOPS menu screen (after the GIS software is selected) looks like the example shown in Figure 9. Each aspect of a STOPS run is labeled as "Files Not Found" or "Not Complete"at the beginning of a run. Each item on the left side of the menu (Set-up and Data Preparation Steps) will switch to "FILES FOUND!" when STOPS detects that the necessary files have been properly assembled.

Please note that in some cases a "FILES FOUND!" status label does not necessarily mean that the file is ready for use. In many cases a user might defer data entry for one or more elements of a data file (e.g., GTFS file parameters before the GTFS files have been constructed). STOPS does not know if the various files have been fully populated with accurate data, only that the files appear to be complete and suitable for running STOPS. The user is responsible for completing data entry for files that are only partly populated.

On the right side of the main menu (Batch Steps), the label switches to "COMPLETE!" to indicate that the batch step successfully ran to completion and generated the necessary information to proceed to the next step.

To create or select an existing parameter file (also known as a "control" file) that will control a STOPS model run, click on "1. Select/Create Parameter File". This will open a standard windows dialog for selecting a file (see Figure 10). If the parameter file has been previously created, use the dialog to select the directory and filename containing the parameter file.

If this is the first time that you are using STOPS or is a brand-new project, this dialog can be used to create a new folder (using the "New Folder" Button, see Figure 11) where the project will reside. Please note that just like all Windows applications, the "New Folder" Button creates the new folder at the location that is highlighted in the body of the dialogue so the user should first point to the main folder where the project should reside (e.g., d:\stops in this example) before pressing the "New Folder" button. The user should rename the folder to describe the project ("SEA" in the example for "Seattle"). Double click on the new folder to open it and then type the name of the desired parameter filename in the line labeled "File name:". It is not necessary to enter the file extension (".ctl"), just the name is required (Seattle in the example). If this is a new file, then STOPS will ask you to confirm that you want to create a new parameter file. Click "Yes" to proceed or "No" to select another filename.

If "Yes" is clicked, STOPS will ask the user if the new scenario should be created by copying another scenario. If "Yes" is clicked in response to this question, then a dialogue will open that asking the user to select the control filename of the scenario to be copied. If "No" is clicked, then STOPS will create a blank scenario. This dialogue is illustrated in Figure 12.

This action will result in STOPS creating the STOPS sub-directory structure that will provide a home for the STOPS input and output data files. All directories are created except those which relate to individual GTFS file sets which are manually created by the user as those files are prepared.

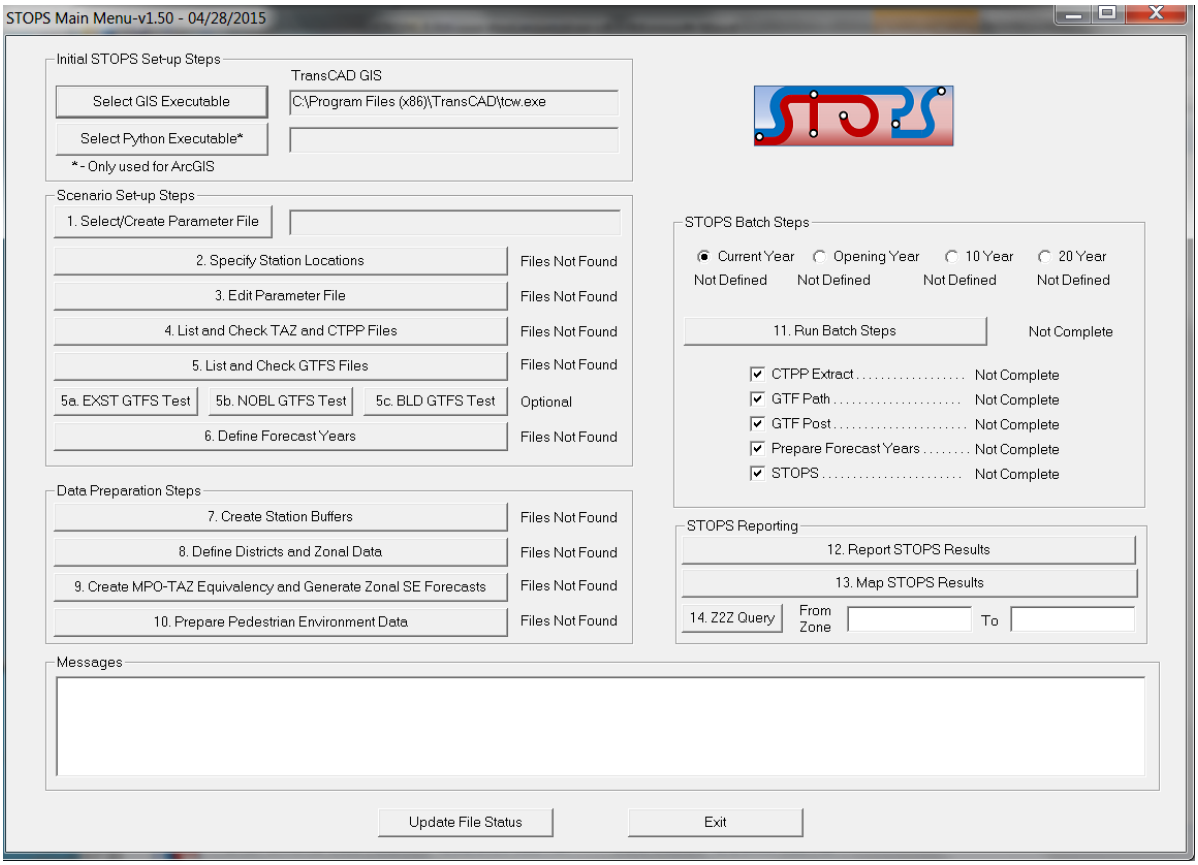


Figure 9. Initial STOPS Menu

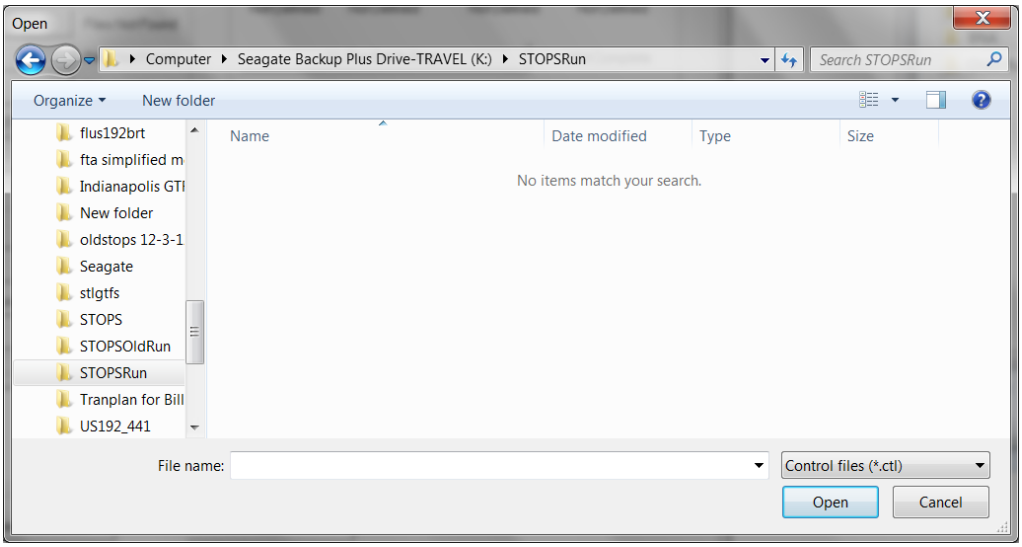


Figure 10. Standard Windows File Selection Dialog Used in STOPS

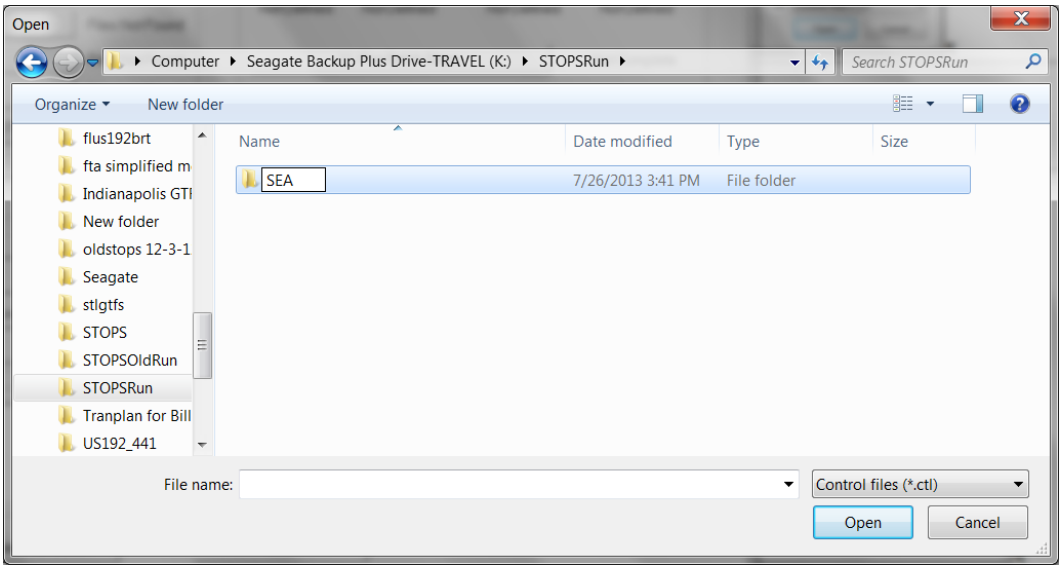


Figure 11. Creating a New Folder and Folder Name

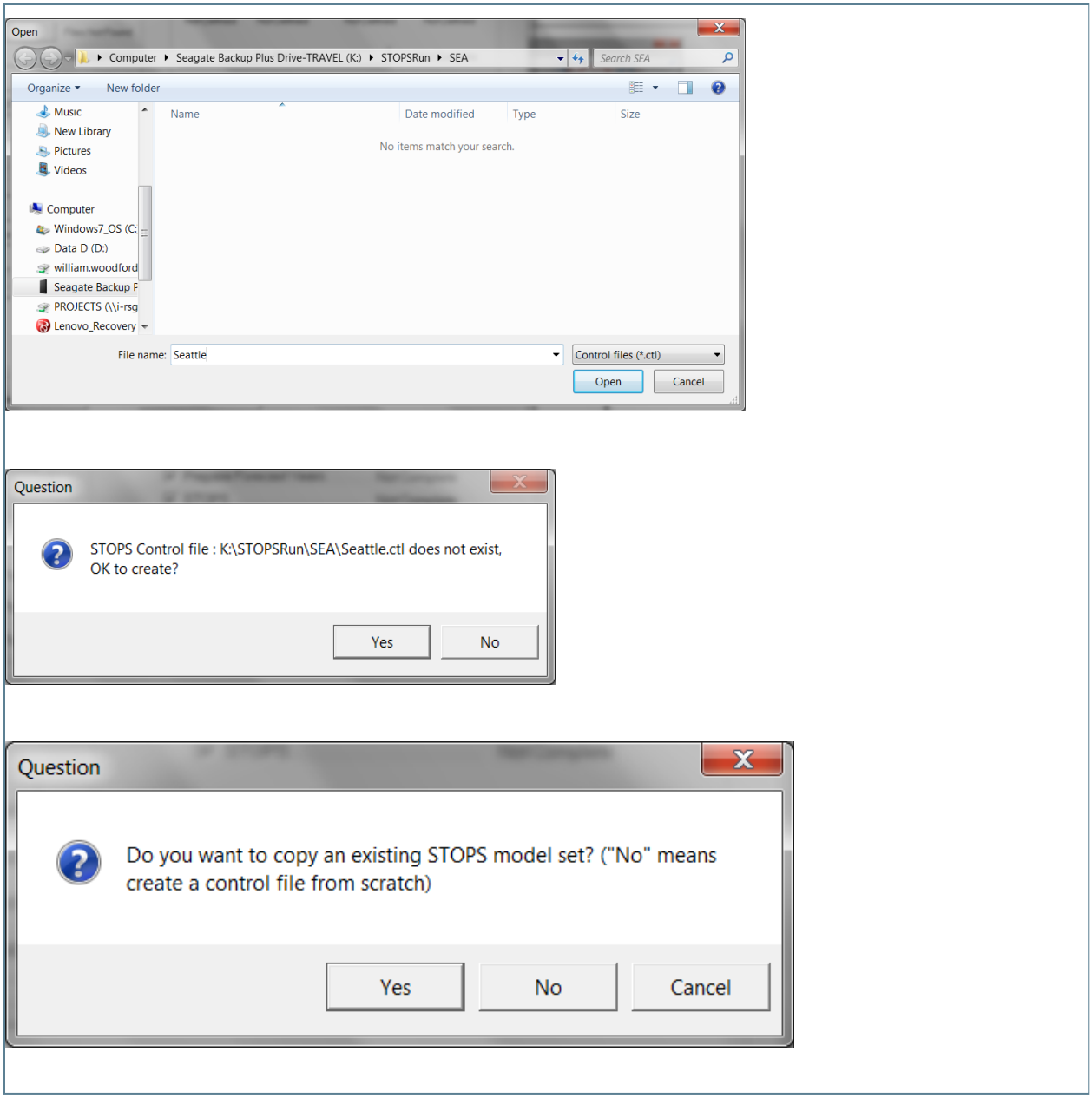


Figure 12. Creating a New Parameter File

4.2 Station Locations

STOPS preparation begins with a file defining the station locations, names, types, and information that relate these stations to the region's automated schedule data. This file starts with a nation-wide database of existing stop locations that is included with the STOPS program and is automatically copied the first time that the STOPS step that specifies station locations is run. This file is pre-populated with many existing stations across the United States[6] and includes the station name, latitude, and longitude. This file includes a variable called "STOPSType" that indicates whether or not the station is active for this scenario. All stations in the pre-populated database have a null value for this variable which means that the station is not part of the scenario. The user should identify which of the existing stations should be enabled, whether or not it has Park-and-Ride, and whether or not the station is at-grade or grade-separated. New stations can also be added to this database using standard GIS tools.

When the station database is complete for a scenario, it should include all stations that currently exist in the corridor, all stations that are part of the no-build, and all stations that are to be built as part of the project. Stations represent just the fixed guideway portion of service at a particular location and stations shared by multiple agencies should be coded as distinct stations, each having ridership information for that agency.

Data to be entered into the station file include:

- ***Station Location*** – latitude and longitude in decimal degrees (e.g., 38.892427 or -77.084714). This value is generated by the GIS software by locating the station point on a map.

- ***STATIONSEQ (Station sequence)*** – an integer used to specify the sort order of stations for reports. This number has no impact on STOPS processing and is only used to make output reports more readable. The station sequence should organize stations in a logical order. One approach is to have all new project stations have the lowest numbers and be in the order that they exist on the line. This will make these stations easier to see in the STOPS report. For each existing or no-build line, code the sequence for each line from the outer-most station to the CBD. Organize the lines so that each mode (e.g., LRT) is grouped together before beginning the next mode (e.g., commuter rail).

- ***STATION (Station name)*** – the full name of the station (up to 35 characters).

- ***STAT_CODE (Station code)*** – a short name of up to 9 characters used for some column headings.

- ***STAT_GRP (Station group)*** – a numerical group code (generally, 1 to 20 but may be as high as 250) that is used for reporting and for aggregations for station-level calibration. Station groups should be designed to represent groups of similar stations and are a key element of the STOPS internal calibration process. This capability allows the user to define a station

[6] This database is several years old and is provided as a starting point to define stations. In some cases, stations will have opened, closed, or moved since this database was created. The user should review each station in the station database to confirm that the station locations are approximately accurate. STOPS only uses the station file coordinates to identify a 25 mile buffer (GTFS files provide more specific locations for purposes of determining walk access). This means that the stations in the station database need only be geolocated to within ¼ mile of the actual station location and that the station data in this section be coded on the record.

group that includes similar stations, both existing and new. The self-calibration process adjusts STOPS to match existing stations and then applies these results to new stations.

Version 1.50 Highlight:

In previous versions of STOPS, new stations were grouped with similar existing stations. Starting with Version 1.50, new stations associated with projects should be given a new group number that is different from any existing station group. The only exception would be for cases were a single new station is constructed in the vicinity of a similar station serving a similar market.

The STOPSType and Newstation variables have additional (or changed) values that should be reviewed when converting older STOPS applications to Version 1.50.

- ***GRP_NAME (Group Name)*** – The name of the group defined in STAT_GRP. Each station group should be given a name just once (i.e., only one station record in each group will have an assigned group name). STOPS will assign that name to all stations with that group number. If multiple names are attached to a single group number then the last name in the file will be applied to all stations in that group.

- ***DAILYBOARD (Daily boardings)*** – the number of counted current year boarding passengers at the station. This number is used for station-level calibration.

- ***STOP_ID1 to STOP_ID4 (GTFS STOP_IDs)*** -- up to 4 stop_ids defined in the automated schedules (GTFS) that describe the stops that, together, represent the fixed-guideway platforms at the station. A comprehensive discussion of GTFS schedule data is presented in Section 4.8.1. The STOP_ID must agree exactly with the stop_ID used in the path building program (GTFPath). This is most easily accomplished by running Step 5a, 5b, and/or 5c (GTFS Test Steps) which will generate a listing of fixed guideway STOP_IDs that should be included in the station file. Several rules to bear in mind are:

    1. Many agencies use separate stop_ids for each platform at a station. The use of multiple (up to 4) fields in the station file allows STOPS to combine each platform into a single station for reporting and comparison to boarding counts.
    2. Only those GTFS STOP_IDs representing platforms used by fixed guideway services should be coded. Some agencies also have separate STOP_IDs for buses serving the station that may be labeled with the same station name. These STOP_IDs should not be coded on the station record. If there is any doubt about which stations should be attached to the station record, run the GTFS Test procedures.
    3. If a GTFS suffix is needed (See Section 4.8.2.2), this one-character identifier should be included in the GTFS Stop IDs in character position 10. Thus, if the GTFS ID for a station is “2722” and suffix “B” is used for the GTFS file set, then the GTFS STOP_ID in the station file is identified as “2722 B” (5 blanks between the 4-character ID and the suffix).
    4. If a string longer than 9 characters must be used as a STOP_ID, then a shorter alias must be used that is organized as nnnnnS# where “nnnnn” is an STOPS-generated integer ID, “S” is the suffix (may be blank), and “#” is a code used to identify alias IDs. Given the complexity of aliases, it is essential that the user run the GTFS Test steps whenever long STOP_IDs occur.

- ***STOPSTYPE (STOPS Type)*** – a numerical field that indicates whether this station is to be part of the current scenario. Values include:
    1. 0 (or missing value): Not part of this run
    2. 1: At-grade station without Park-and-Ride (PNR) access
    3. 2: At-grade station with Park-and-Ride (PNR) access
    4. 3: Grade-separated (1 level up or down, adds 0.5 minutes) station with no Park-and-Ride (PNR) access
    5. 4: Grade-separated (1 level up or down, adds 0.5 minutes) station with Park-and-Ride (PNR) access
    6. 5: Grade-separated (2 levels up/down, adds 1.0 minutes) station without Park-and-Ride (PNR) access
    7. 6: Grade-separated (2 levels up/down, adds 1.0 minutes) station with Park-and-Ride (PNR) access
    8. 7: Grade-separated (3 level up/down, adds 1.5 minutes) station without Park-and-Ride (PNR) access
    9. 8: Grade-separated (3 level up /down, adds 1.5 minutes) station with Park-and-Ride (PNR) access

- ***NEWSTATION (New Station Indicator)*** – an integer field that is used in STOPS to distinguish between new stations (i.e., stations associated with a project) and existing stations. One of four values should be coded:
    1. 0: (or missing value): Not a new (project) station
    2. 1: New (project) Station[7]
    3. 2: (Rarely used) Not a new project station but used for cases where a project bridges a gap between two sets of existing stations but has no stations itself. A "2" is coded for one side of that gap.
    4. 3: (Rarely used) Similar to "2" but represents the other side of the gap. If a trip goes from 2 to 3 then it would be considered a trip on the project even if it doesn't board or alight at a new station.
    5. 4: Used to indicate a station that should be reported in the station-to-station matrices but is not part of the project. (In general, stations that are not part of the project are not tallied in the station-to-station matrices that are prepared by STOPS).

[7] Prior versions of STOPS used NewStation types 3 and 4 for any case where a project bridges a gap between two existing transit services. With STOPS v1.50, the coding is only necessary if there is no new station on the gap-filling segment.

In cases where a new station does not exist on the project, it is usually easiest to code a dummy station in the station database with a new, unique stop_id. Next, add that new stop_id in the GTFS database (stop.txt and stop_times.txt files) for all routes that use the project. To prevent passengers from boarding or alighting at this stop, use the GTFS pickup_type and drop_off_type fields set to 1 for these stops.

STOPS will still accept NewStation types 3-4 to define gap-bridging projects for cases in which this form of project identification is easier.

- ***WALK_PEN (Optional additional walk access penalty)*** – a floating point field that contains the additional (penalty) time (in minutes) required to use the station above and beyond the time required by either the horizontal separation (i.e., latitude and longitude differences) and vertical separation (i.e., differences implied by the grade separation parameter). This value can be used to represent both actual walking times and other contributors to impedance such as fare or service perceptions. This parameter is added to all centroid-to-stop walk access connectors.

- ***KNR_PEN (Optional additional kiss-and-ride access penalty)*** – Similar to WALK_PEN, this parameter contains the number of minutes to be added to all centroid-to-stop kiss-and-ride access connectors.

- ***PNR_PEN (Optional additional kiss-and-ride access penalty)*** – Similar to WALK_PEN, this parameter contains the number of minutes to be added to all centroid-to-stop kiss-and-ride park-and-ride access connectors.

- ***SAMEGTFX (Optional additional stop-to-stop transfer penalty for stops appearing in the same GTFS directory)*** – Similar to WALK_PEN, this parameter contains the number of minutes to be added to all centroid-to-stop kiss-and-ride park-and-ride access connectors.

- ***DIFFGTFX (Optional additional stop-to-stop transfer penalty for stops appearing in different GTFS directories)*** – Similar to WALK_PEN, this parameter contains the number of minutes to be added to all centroid-to-stop kiss-and-ride park-and-ride access connectors.

The station file may also have additional fields for user notes. These fields but are not used by STOPS and have no effect on forecast outcomes.

4.2.1 Creating the Station Data File

To create or edit the station file, click on "2. Specify Station Locations" in the STOPS Main Menu. When this is done, STOPS will create a new station data file if this is the first time this function is selected and then open a GIS window displaying the station data file (shown in Figure 13). Use the GIS system to:

1. Select active systems by setting the STOPSType field

2. Add or move stations by using the GIS capabilities to click on a map location to create a point or drag an existing point to a new location

3. Edit each of the data fields for each active station to accurately reflect:

- Station sequence
- Station name
- Station code
- Station group
- Group name
- At least one (but up to four) GTFS ID(s)
- New Station status

A tabular view of the data appears in Figure 14.

It is likely that the user will not know all of this data at the beginning of the STOPS process. STOPS allows the user to return to this screen during the course of the STOPS set-up process to add information as it becomes available. This is particularly helpful for entering GTFS IDs which may not be fully known before the GTFS files are created. However, it is important that the user know what states and what geography type will be used at the very beginning of the STOPS process. Care should be taken to make sure that all or nearly all[8] existing, no-build, and build stations are identified the first time this step is run.

[8] It is possible to add stations later so long as it does not affect the assessment of which states comprise the corridor and what geographic analysis type is appropriate for the corridor.

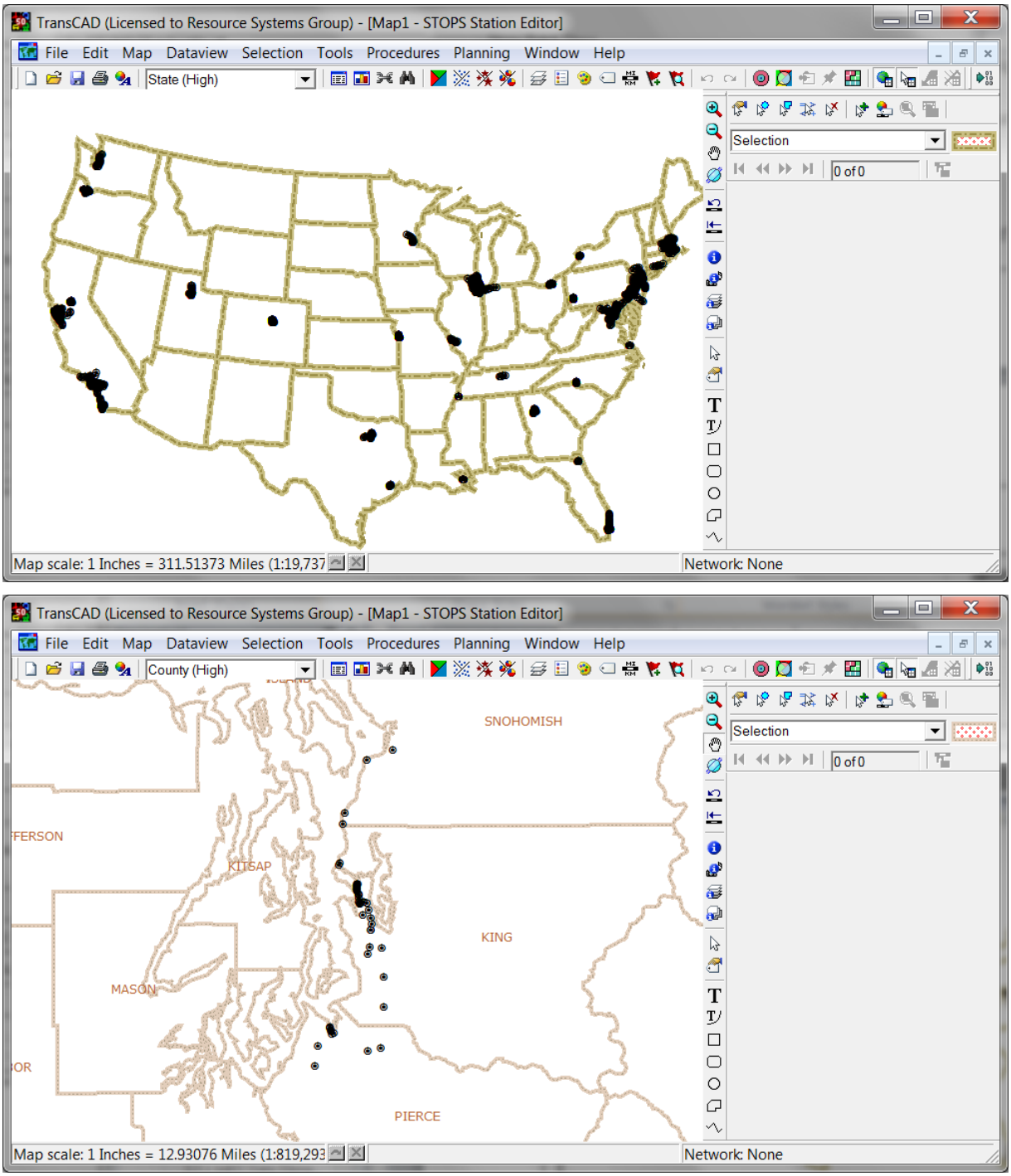
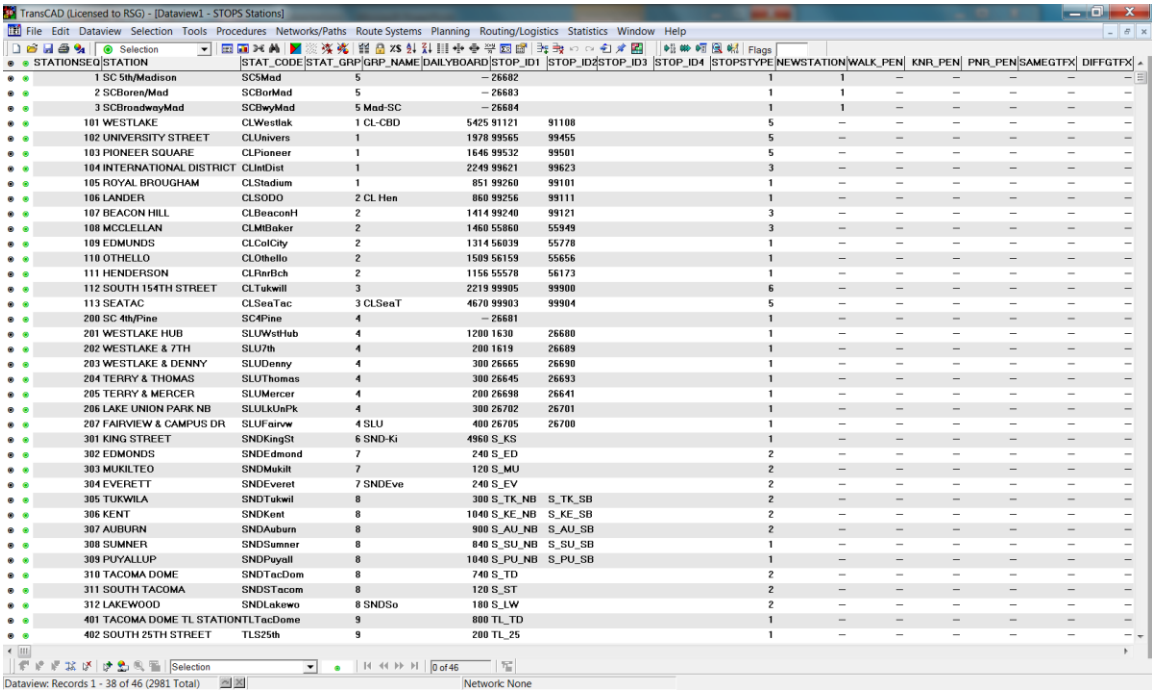


Figure 13. Station Map View (with user-added state/county boundaries)



TransCAD (Licensed to RSG) - [Dataview1 - STOPS Stations]

File Edit Dataview Selection Tools Procedures Networks/Paths Route Systems Planning Routing/Logistics Statistics Window Help

STATIONSEQ	STATION	STAT_CODE	STAT_GRP	GRP_NAME	DAILYBOARD	STOP_ID1	STOP_ID2	STOP_ID3	STOP_ID4	STOPSTYPE	NEWSTATION	WALK_PEN	KNR_PEN	PNR_PEN	SAMEGTFX	DIFFGTFX
1	SC 5th/Madison	SC5Mad	5		–	26682				1	1	–	–	–	–	–
2	SCBoren/Mad	SCBorMad	5		–	26683				1	1	–	–	–	–	–
3	SCBroadwayMad	SCBwyMad	5	Mad-SC	–	26684				1	1	–	–	–	–	–
101	WESTLAKE	CLWestlak	1	CL-CBD	5425	91121	91108			5	–	–	–	–	–	–
102	UNIVERSITY STREET	CLUnivers	1		1978	99565	99455			5	–	–	–	–	–	–
103	PIONEER SQUARE	CLPioneer	1		1646	99532	99501			5	–	–	–	–	–	–
104	INTERNATIONAL DISTRICT	CLIntDist	1		2249	99621	99623			3	–	–	–	–	–	–
105	ROYAL BROUGHAM	CLStadium	1		851	99260	99101			1	–	–	–	–	–	–
106	LANDER	CLSODO	2	CL Hen	860	99256	99111			1	–	–	–	–	–	–
107	BEACON HILL	CLBeaconH	2		1414	99240	99121			3	–	–	–	–	–	–
108	MCCLELLAN	CLMtBaker	2		1460	55860	55949			3	–	–	–	–	–	–
109	EDMUNDS	CLColCity	2		1314	56039	55778			1	–	–	–	–	–	–
110	OTHELLO	CLOthello	2		1509	56159	55656			1	–	–	–	–	–	–
111	HENDERSON	CLRnrBch	2		1156	55578	56173			1	–	–	–	–	–	–
112	SOUTH 154TH STREET	CLTukwill	3		2219	99905	99900			6	–	–	–	–	–	–
113	SEATAC	CLSeaTac	3	CLSeaT	4670	99903	99904			5	–	–	–	–	–	–
200	SC 4th/Pine	SC4Pine	4		–	26681				1	–	–	–	–	–	–
201	WESTLAKE HUB	SLUWstHub	4		1200	1630	26680			1	–	–	–	–	–	–
202	WESTLAKE & 7TH	SLU7th	4		200	1619	26689			1	–	–	–	–	–	–
203	WESTLAKE & DENNY	SLUDenny	4		300	26665	26690			1	–	–	–	–	–	–
204	TERRY & THOMAS	SLUThomas	4		300	26645	26693			1	–	–	–	–	–	–
205	TERRY & MERCER	SLUMercer	4		200	26698	26641			1	–	–	–	–	–	–
206	LAKE UNION PARK NB	SLULkUnPk	4		300	26702	26701			1	–	–	–	–	–	–
207	FAIRVIEW & CAMPUS DR	SLUFairvw	4	SLU	400	26705	26700			1	–	–	–	–	–	–
301	KING STREET	SNDKingSt	6	SND-Ki	4960	S_KS				1	–	–	–	–	–	–
302	EDMONDS	SNDEdmond	7		240	S_ED				2	–	–	–	–	–	–
303	MUKILTEO	SNDMukilt	7		120	S_MU				2	–	–	–	–	–	–
304	EVERETT	SNDEveret	7	SNDEve	240	S_EV				2	–	–	–	–	–	–
305	TUKWILA	SNDTukwil	8		300	S_TK_NB	S_TK_SB			2	–	–	–	–	–	–
306	KENT	SNDKent	8		1040	S_KE_NB	S_KE_SB			2	–	–	–	–	–	–
307	AUBURN	SNDAuburn	8		900	S_AU_NB	S_AU_SB			2	–	–	–	–	–	–
308	SUMNER	SNDSumner	8		840	S_SU_NB	S_SU_SB			1	–	–	–	–	–	–
309	PUYALLUP	SNDPuyall	8		1040	S_PU_NB	S_PU_SB			1	–	–	–	–	–	–
310	TACOMA DOME	SNDTacDom	8		740	S_TD				2	–	–	–	–	–	–
311	SOUTH TACOMA	SNDSTacom	8		120	S_ST				2	–	–	–	–	–	–
312	LAKEWOOD	SNDLakewo	8	SNDSo	180	S_LW				2	–	–	–	–	–	–
401	TACOMA DOME TL STATION	TLTacDome	9		800	TL_TD				1	–	–	–	–	–	–
402	SOUTH 25TH STREET	TLS25th	9		200	TL_25				1	–	–	–	–	–	–

Dataview: Records 1 - 38 of 46 (2981 Total) Network: None

Figure 14. Station Definition in TransCAD

If you are using TransCAD to edit stations, then STOPS created an editable TransCAD geographic database from the ESRI shape file that is used as the input to STOPS. After the user closes TransCAD, then STOPS asks if it is OK to copy this file back to the ESRI shape file format. Click "Yes" to copy this data back to ESRI Shape File format or "No" to skip this step and lose the changes entered into TransCAD. This dialogue is shown in Figure 15.

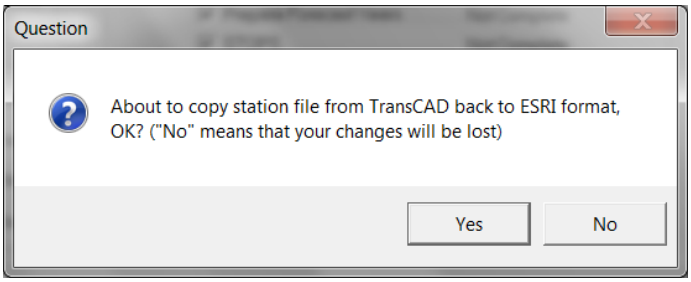


Figure 15. TransCAD Confirmation After Station Editing

4.3 Define STOPS Parameters (Part 1 - Run Names and Geography)

After the stations have been located, it is possible for the user to do a geographic analysis to determine what states are present within a 25 mile radius of existing and future stations (the "corridor") and whether the corridor lies entirely within a metropolitan area in which TZ or BG geography types are available. These analyses are typical GIS activities and are assumed to be performed by an analyst outside of STOPS[9].

With this understanding, the user can begin to define the STOPS parameter file.

To begin this process, click on "3. Edit Parameter File". When this is done, the screen shown in Figure 16 appears.

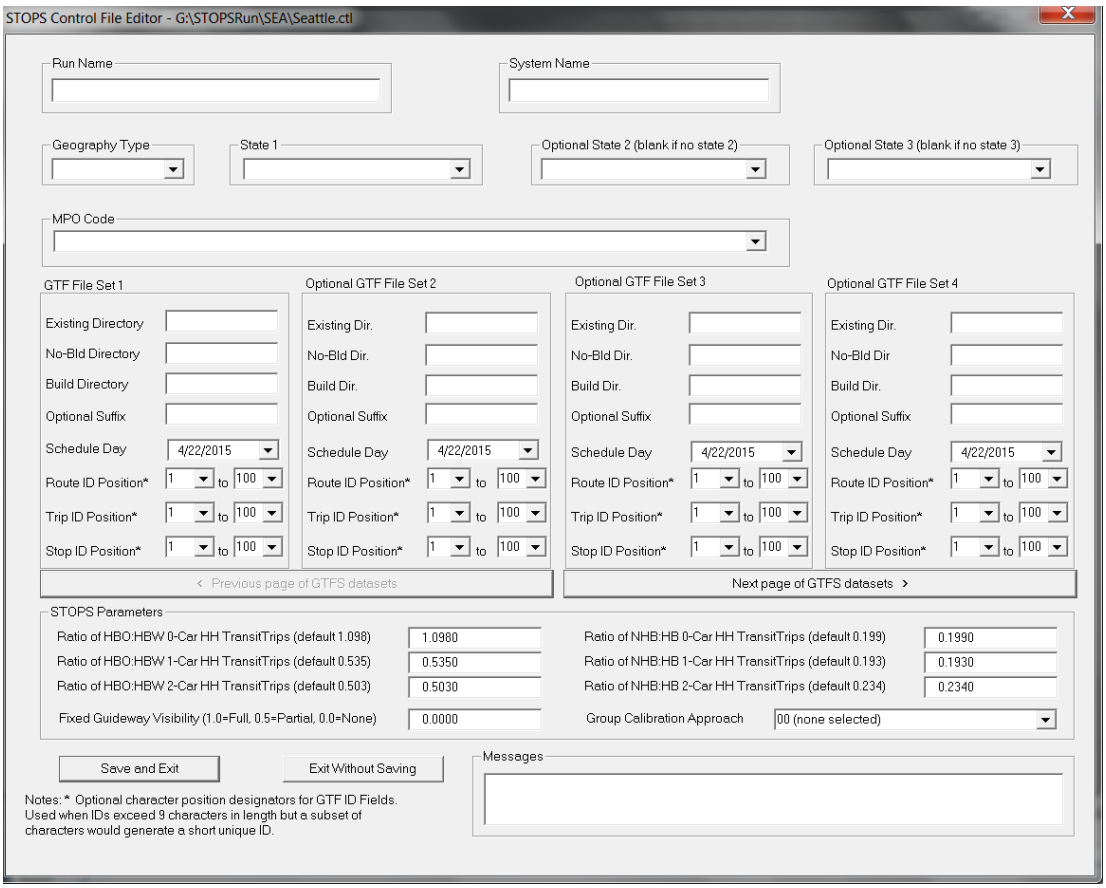


Figure 16. STOPS Parameter Screen

Begin by filling in the Run Name and System Name. These fields appear in the STOPS output reports. The run name defines the project represented with this STOPS run and the system name is used to record the scope of the transit systems included in the analysis. At this point, the user should also select the geography type, states and MPO code from the drop down lists.

[9] The analysis could be performed selecting "2. Specify Station Locations" to open the station file and then creating a 25-mile buffer and adding state and county layers to determine states and other characteristics.

When this is accomplished, the screen should look like the example shown in Figure 17. If GTFS and parameter information are known at this time, that data can be entered. However, a later step will update the parameter file if this information is not yet known.

Click Save and Exit to save the coded parameters and exit the data entry screen. The parameter file may still be shown as "File Not Found" at this point. STOPS checks to make sure that GTFS information has been defined for the run and if no information has been provided, then STOPS does not consider this file to be complete. For the moment, the GTFS file definitions are not necessary and this warning can be ignored. GTFS information will be entered into the parameter file during a later step, at which time the status will change to "FILES FOUND!".

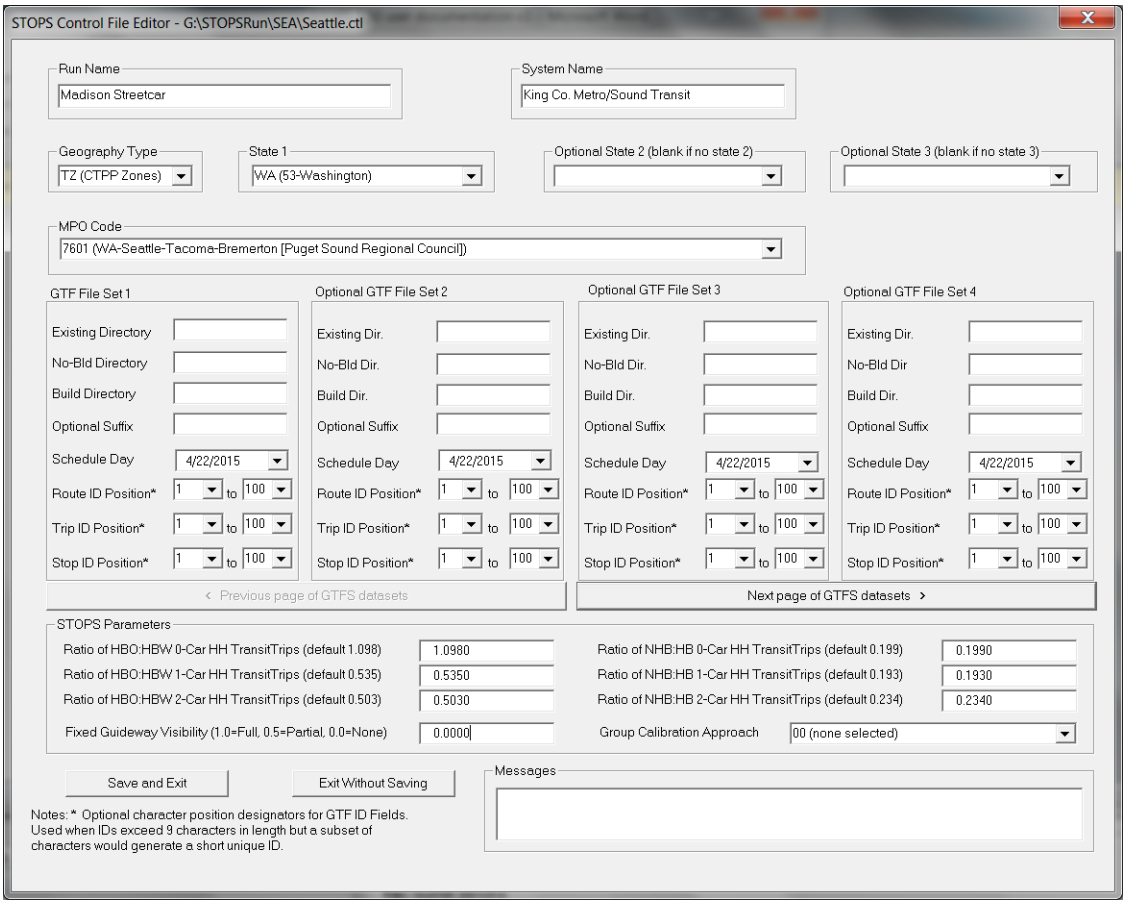


Figure 17. STOPS Parameter Screen With Geography Type, State, and MPO Codes

4.4 List and Check TAZ and CTPP Files

After the Geography Type, States, and MPO Codes are entered, STOPS can generate a list of required files and the directories where this data should be stored. This is accomplished by clicking on "4. List and Check TAZ and CTPP Files". When that is done, the screen shown in Figure 18 appears.

After each file is a label indicating whether or not the file was found in the required directory. When all files are found, this step is marked as "FILES FOUND!" in the main menu.

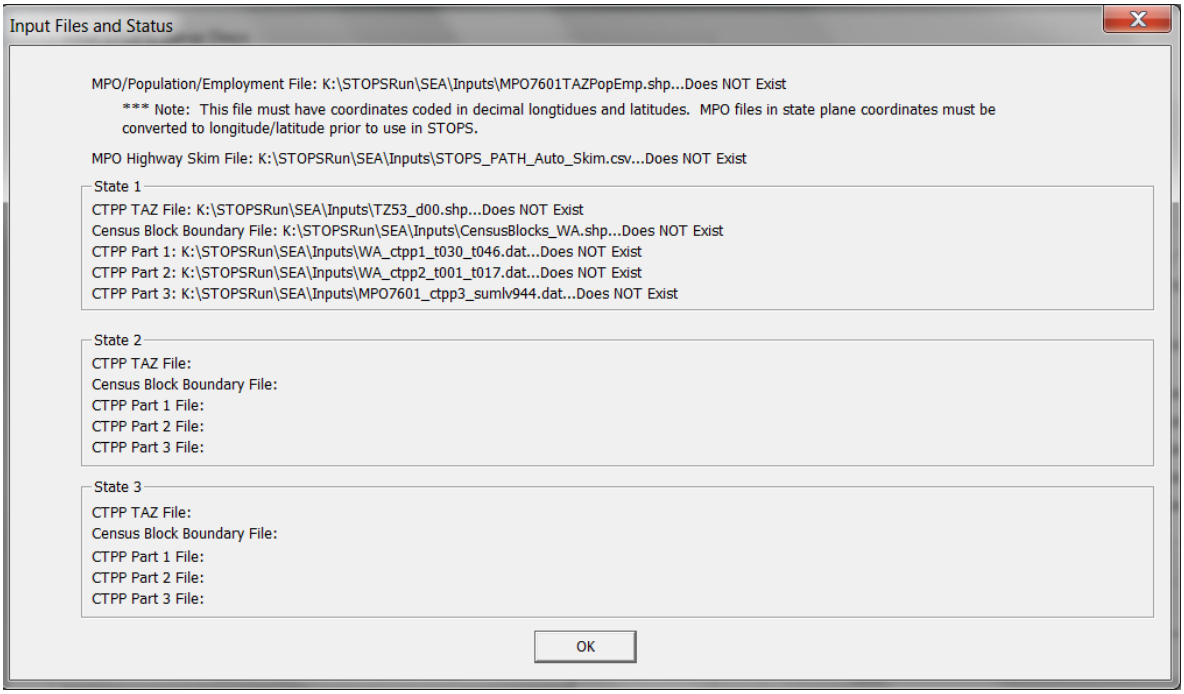


Figure 18. Screen Showing Location of CTPP and MPO TAZ Files

4.5 Obtaining Census and CTPP Data

The Year 2000 Census and CTPP provide five types of input data to STOPS:

1. One geographic information system (GIS) file in ESRI Shape (.shp) file format for each state in the corridor being modeled that describes the boundaries of the census geography used in the remaining CTPP files.
2. One CTPP Part I file (workers by residence location) for each state in the corridor being modeled.
3. One CTPP Part II file (workers by employment location) for each state in the corridor being modeled.
4. One or more CTPP Part III (Journey-to-Work flows) file (one file for corridors where local zones or Block Group data are available; otherwise one file per state in the corridor).
5. One Census Block boundary file in ESRI shape file format for each state in the corridor being modeled.

The required CTPP data is available from the FTA STOPS website. These data were obtained from the Census Bureau (geographic boundary files) and the Bureau of Transportation Statistics (CTPP Parts I, II, and III).

4.5.1 CTPP and Census File Names

STOPS generally uses the same CTPP file names and file structures as originally assigned by the Census Bureau and BTS. The only exception occurs with the block file names which are assigned a shorter name on the FTA STOPS website. In cases where corridors span multiple states, separate CTPP and Census Files (one for each state) are downloaded from the FTA STOPS website.

File names are related to the corridor state FIPS[10] codes and the MPO codes[11] as shown below. In these file names, "XX" refers to the first state's FIPS code. In multi-state corridors, "YY" refers to the second state's FIPS code and "ZZ" refers to the third state's FIPS code. Four digit MPO codes are represented with "9999". Different files use the numeric and alpha codes as indicated below

- CTPP Boundary Files (all files stored in the inputs\ subdirectory) – ***Numeric FIPS***
  - All projects:
    - tzXX_d00_shp.zip (projects with a TZ geography type)
    - bgXX_d00_shp.zip (projects with a BG geography type)
    - trXX_d00_shp.zip (projects with a TR geography type)
  - Additionally, for corridors with 2 or more states:
    - tzYY_d00_shp.zip (projects with a TZ geography type)
    - bgYY_d00_shp.zip (projects with a BG geography type)
    - trXX_YY_d00_shp.zip (projects with a TR geography type)
  - Additionally, for corridors with 3 or more states:
    - tzZZ_d00_shp.zip (projects with a TZ geography type)
    - bgZZ_d00_shp.zip (projects with a BG geography type)
    - trZZ_d00_shp.zip projects with a TR geography type)

- CTPP JTW Part I file(s) (all files stored in the inputs\ subdirectory) – ***Alpha FIPS***
  - XX_ctpp1_t030_t046.dat
  - YY_ctpp1_t030_t046.dat (additionally, for corridors with 2 or more states)
  - ZZ_ctpp1_t030_t046.dat (additionally, for corridors with 3 states)

- CTPP JTW Part II file(s) (all files stored in the inputs\ subdirectory) – ***Alpha FIPS***
  - XX_ctpp2_t001_t017.dat
  - YY_ctpp2_t001_t017.dat (additionally, for corridors with 2 or more states)
  - ZZ_ctpp2_t001_t017.dat (additionally, for corridors with 3 states)

- CTPP JTW Part III file(s) (all files stored in the inputs\ subdirectory) – ***Alpha FIPS***
  - If the project uses TZ or BG geography types:
    - MPO9999_ctpp3_sumlv944.dat
  - If the project will use Tracts (TR):
    - XX_ctpp3_sumlv140.dat
    - YY_ctpp3_sumlv140.dat (additionally, for corridors with 2 or more states)
    - ZZ_ctpp3_sumlv140.dat (additionally, for corridors with 3 states)

[10] FIPS (The Federal Information Processing Standard) defines a two-digit numeric and 2-character alpha code identifying each state and is presented in Section 9.1.
[11] MPO Codes are defined by the Census Bureau and are presented in Section 9.2.

- Census Block Files – ***Alpha FIPS***
    - CensusBlocks_XX.shp
    - CensusBlocks_YY.shp (additionally, for corridors with 2 or more states)
    - CensusBlocks_ZZ.shp (additionally, for corridors with 3 states)

4.5.2 Downloading CTPP and Census Geographic Boundary File Data

The FTA STOPS website has a link that allows users to download a compressed (zip) file that contains all of the CTPP and Census data need to run STOPS. Project corridors located in a single state need just one state file and project corridors that span multiple states will need the zip files for each state.

After downloading the appropriate state zip files, the user must extract the files identified on the screen shown in Figure 18. These files are all stored in the inputs\ subdirectory.

Hint: The State level block files are often quite large and include block data for the entire state. STOPS processing speeds may be improved by updating the Block shape file to delete blocks that are located beyond the boundaries of the metropolitan area. This editing is optional and users should take care to delete only those blocks that are well beyond the limits of the metropolitan area. If there is any doubt whether a block is or is not part of a metropolitan area, then the blocks should be left in the data set. This edit is only recommended for the very largest states such as California and Texas.

4.5.3 Splitting CTPP Geography

In some cases, the CTPP geography will be too coarse to support detailed analysis of transit ridership potential. To improve (to some degree) the geographic precision of the model, STOPS allows users to split Census Geography. This is done by using a GIS package to edit the census boundary files in ESRI shape file format. A Census TAZ, block group or tract that is too big, can be split into one or more smaller subdivisions. The user must take care to ensure that the original FIPS state , county, and TAZ (or tract or block group) designations appear in each split zone. That way, STOPS knows to associate CTPP Journey-to-Work records with each of the split zones. The user is responsible for assigning a new and unique zone identifier (up to 6 characters) for each split zone and coding this identifier in the LSAD_TRANS field. If STOPS detects multiple records in the Census geography shape file that are not renamed with a unique zone identifier in LSAD_TRANS, then STOPS will display an error message and direct the user to a report that identifies the duplicate entries. In some cases, the original Census files have duplicate zone TAZs that also must be given an alternative identifier in LSAD_TRANS.

During processing, STOPS will detect census zones that have been subdivided and allocate trips according to the relative population and employment (from the MPO data files) in each sub-zone.

4.5.4 Controlling the Geographic Extent of the Analysis

Special coding can also be used to control the geographic extent of the analysis. By default, STOPS processes all CTPP zones within 25 miles of a coded station. In some cases, this rule extends the STOPS analysis into nearby regions that are not served by the modeled transit agency. To limit STOPS to a specific service area for the modeled transit agencies, STOPS allows users to enter special codes in the LSAD field of the Census geographic files. These codes are defined as follows:

- <blank>: The default value which tells STOPS to include the zone and trips as long as the zone centroid is within 25 miles of an active station.
- YY: Include this zone in the STOPS analysis area only process CTPP Journey-to-Work trips that travel to/or from a zone coded with a blank in LSAD. If both ends have "YY" in LSAD, then do not process any CTPP trips for this zone-to-zone interchange[12].
- XX : Exclude this zone from the STOPS analysis

4.6 Metropolitan Planning Organization Data

STOPS uses data from the local Metropolitan Planning Organization (MPO) to represent:

- Current and projected future-year population and employment to "grow" the 2000 CTPP JTW tables to represent current and future conditions
- Zone to zone automobile travel times and distances

Because current MPO zones may or may not align with the Census geographic definitions, the MPO information must be conveyed in a form that allows STOPS to convert MPO zone data to the same geographic area system used by STOPS. This is accomplished by creating an MPO zone layer in ESRI Shape File format that contains information on the model zone number and existing and future population.

The remainder of this section describes the two key datasets that must be obtained from the MPO forecasting process.

4.6.1 MPO Data Filenames

The following filenames are required with STOPS. All files must reside in the "inputs\" subdirectory.

- MPO zone layer with existing and forecasting population and employment named "MPO9999TAZPopEmp.shp", where 9999 is the Census MPO designation.
- MPO Auto Time Matrix named "STOPS_PATH_Auto_skim.csv"

4.6.2 MPO Zone Layer with Existing and Forecasted Population and Employment

The MPO zone layer conveys information on the boundaries of each zone in the regional travel forecasting model, the numeric zone number used in that model, and existing and forecasted population and employment.

[12] This capability is most useful when modeling a suburban carrier that serves a local market in the suburbs and also carries commuters into the central city. The suburban zones would have a blank in LSAD and the central city zones would be coded with "YY" in LSAD. This tells STOPS to estimate transit trips for suburb-suburb, suburb-city, and city-suburb trips but not city-city. GTFS should be provided for both the suburban carrier and for urban transit system since suburban commuters may transfer to the urban system to reach their final destination. The number of coded unlinked trips for calibration would be set to the ridership on the suburban carrier plus an allowance for the estimated number of boardings that suburban customers will make when transferring to the urban transit system.

This file should be constructed using a GIS package (e.g., TransCAD or ArcMap) and saved as an ESRI shape file. Coordinates should be expressed as degrees of longitude and latitude. It should include the fields described below. Other fields may exist in this file (and will be ignored) although some field names ("District") are not allowed.

- Required geographic information
  - Boundary of each zone in the MPO modeling system.
- Coordinate system
  - Decimal degrees of longitude and latitude
- Required data fields
  - Model TAZ zone number (integer). Any user-selected name.
  - Year 2000 Population (numeric). Any user-selected name.[13]
  - Year 2000 Employment (numeric). Any user-selected name.
  - Current Year Population (numeric). Any user-selected name.
  - Current Year Employment (numeric). Any user-selected name.
- Optional data fields[14]
  - Opening Year Population (numeric). Any user-selected name.
  - Opening Year Employment (numeric). Any user-selected name.
  - 10-Year Horizon Population (numeric). Any user-selected name.
  - 10-Year Horizon Employment (numeric). Any user-selected name.
  - 20-Year Horizon Population (numeric). Any user-selected name.
  - 20-Year Horizon Employment (numeric). Any user-selected name.

In some cases, MPOs will provide a TAZ layer in a coordinate system other than longitude and latitude. This can be easily checked in either TransCAD or Arc Map by opening the shape file and observing whether or not coordinates are reported in degrees of longitude and latitude. Figure 19 and Figure 20 show the file coordinate system identification in TransCAD and Arc Map, respectively.

[13] In some cases, MPO data may not be available for the Year 2000 or the current year. In general, FTA will accept data representing a point in time one or two years away from these dates if the corridor is not changing dramatically and if the alternate years would result in similar growth factors as would have been produced by Year 2000 and the current year data. Otherwise, users are advised to speak with their FTA project coordinator to determine the best approach for proceeding with the analysis.
[14] If these optional fields are not present, STOPS can still be used but the forecast years will be limited to the cases where data fields are available.

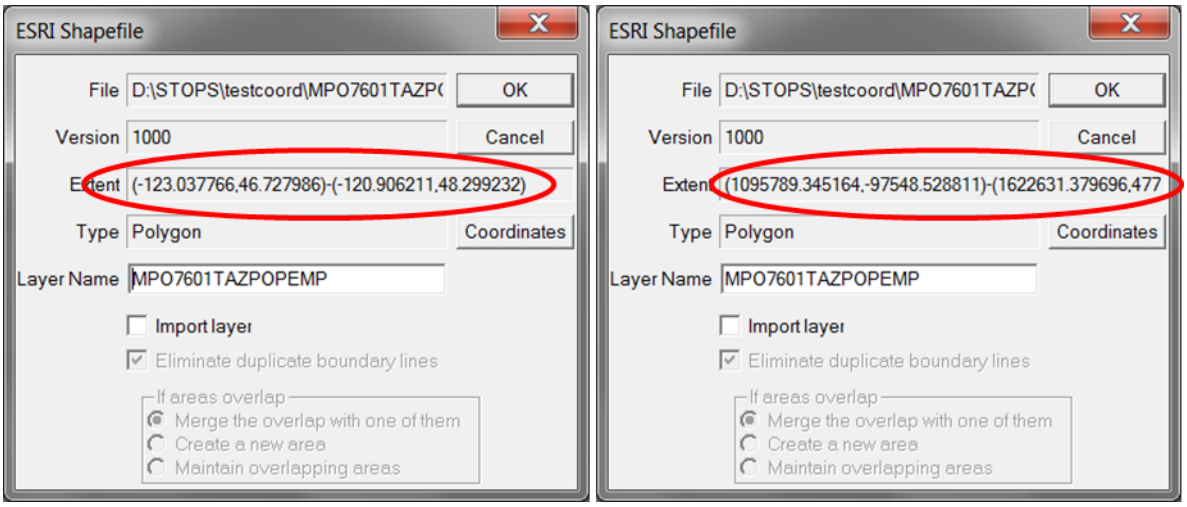


Figure 19. TransCAD Shape File Opening Dialog with Longitude/Latitude (Left) and Non-Longitude/Latitude Coordinates (Right)

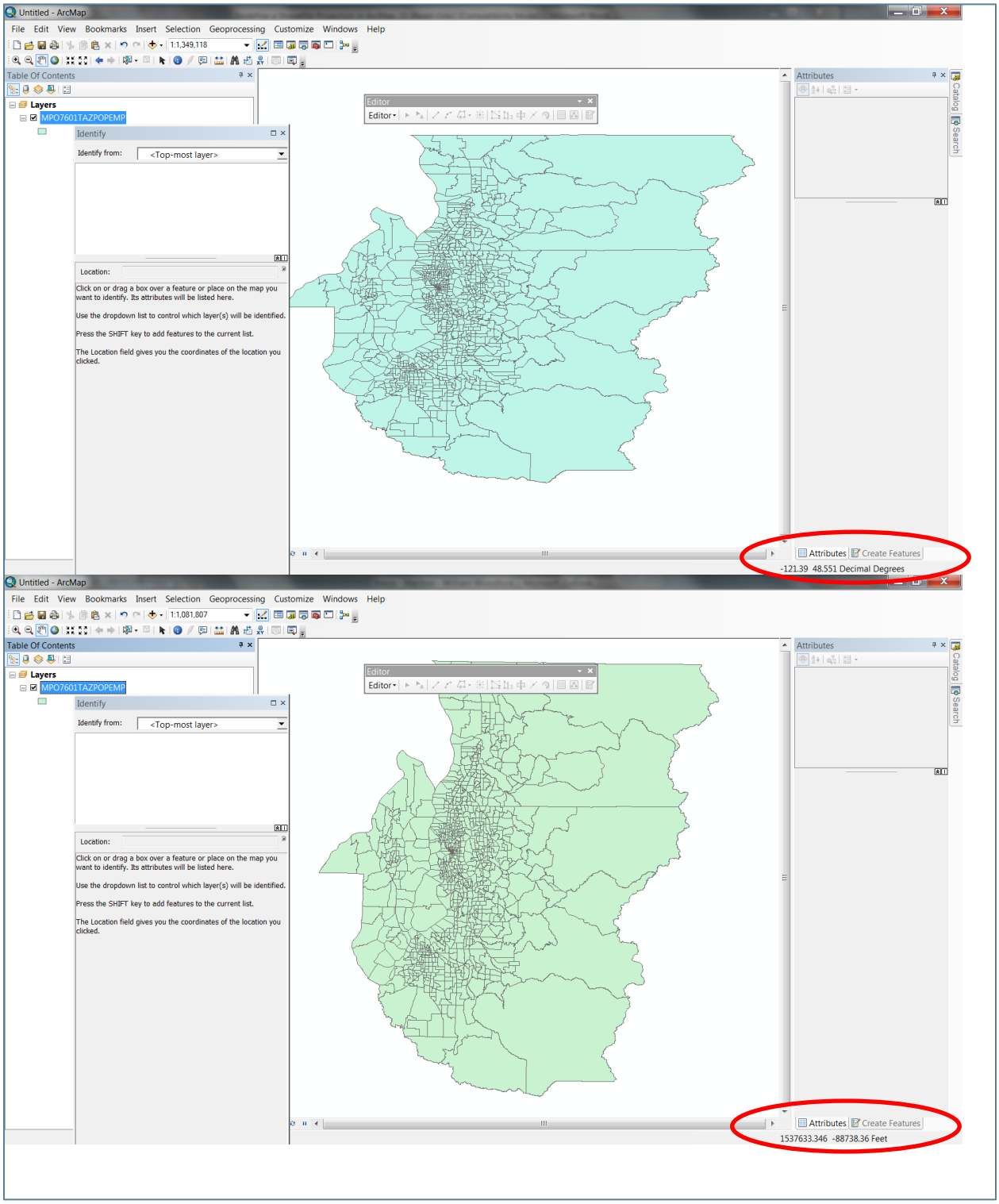


Figure 20. Arc Map Screen with Longitude/Latitude Coordinates (Top) and Non-Longitude/Latitude Coordinates (Bottom)

If the coordinates are in not longitude/latitude format, the user must convert this file to longitude and latitude coordinates consistent with the coding of shape files from the Census Bureau. This conversion can be accomplished in both TransCAD, Arc Map and many other packages. In TransCAD, this can be done by using the Tools>Export command. Select the ESRI shape file format and specify the desired file name. TransCAD exports default to Longitude/Latitude coordinates so no other action is required.

In Arc Map, use the Arc Toolbox button on the menu bar, and open Data Management Tools>Projections and Transformations>Feature and then double click on "Project" (see Figure 21). This will open a dialog that allows the user to specify the output coordinates as shown in Figure 22.

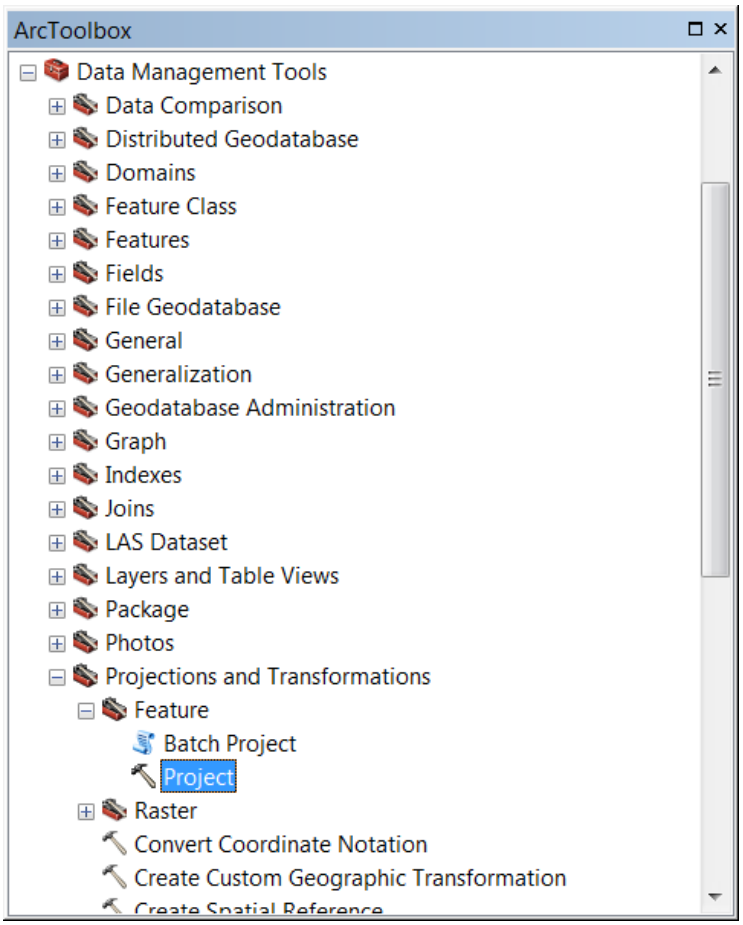


Figure 21. Select the Projections and Transformations Project Tool

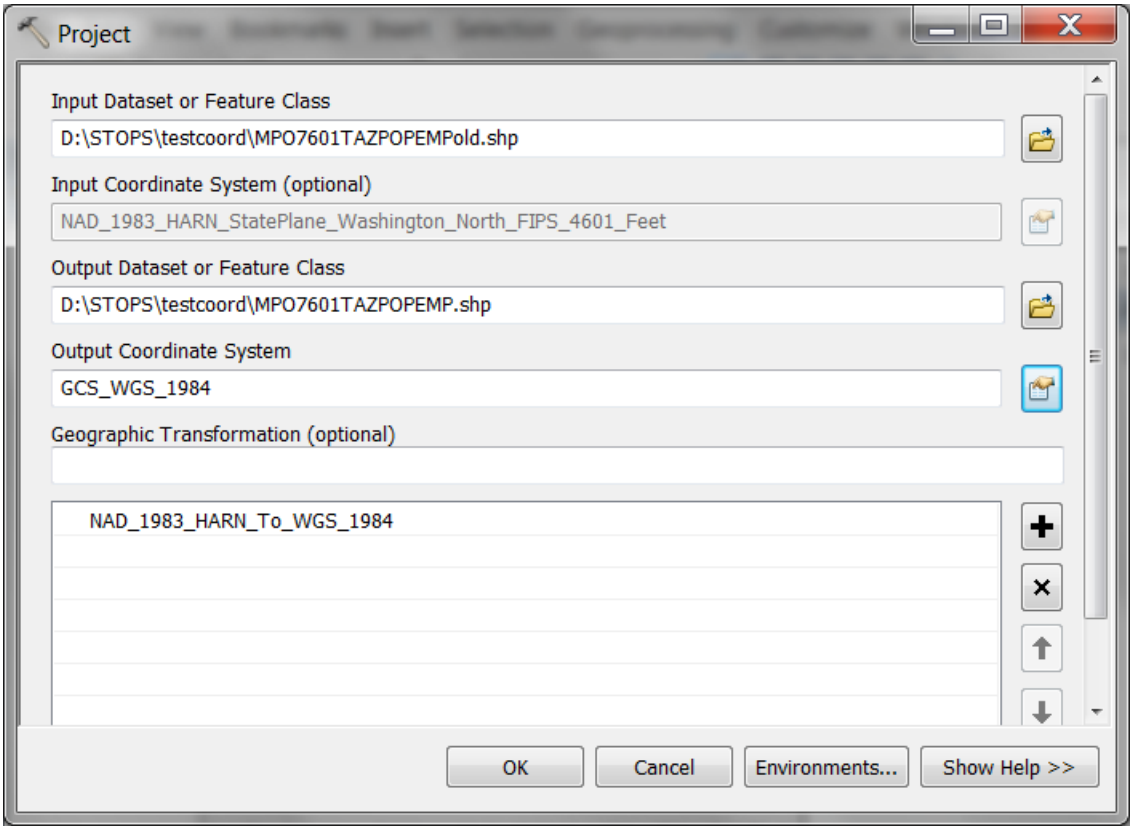


Figure 22. Arc Map Dialog to Convert Coordinates to Longitude/Latitude

In both TransCAD and Arc Map, the user must export the shape file to name that is different from the original file. Accordingly, it may be necessary to rename the file to the desired file name after the export is complete. When renaming shape files, be sure to re-name all of the components of the file (i.e., all extensions).

The user should reopen the revised file to confirm that the MPO shape file has been successfully converted to longitude/latitude coordinates.

4.6.3 MPO Auto Time Matrix

The MPO Auto Time Matrix is obtained by extracting zone-to-zone current year peak period automobile travel times from the regional travel demand forecasting model. The file that is used by STOPS is organized as a text file in comma-separated format with one line for each origin-destination zone pair containing:

- Integer origin zone number from the travel model
- Integer destination zone number
- Real automobile distance for the current year (in miles)
- Real automobile time for the current year (in minutes)
- Real automobile distance for the opening year (in miles)
- Real automobile time for the opening year (in minutes)
- Real automobile distance for the mid-range forecast year (10 year forecast) (in miles)
- Real automobile time for the mid-range forecast year (10 year forecast) (in minutes)

- Real automobile distance for the long-range forecast year (20 year forecast) (in miles)
- Real automobile time for the long-range forecast year (20 year forecast) (in minutes)

If highway travel time data for the opening or forecast years are not available, then these fields may be left empty. Any times or distances that are left blank or set to zero are given the same time or distance values that were entered for the current year.

A portion of a sample auto time matrix file appears in Figure 23.

```
1,1,,12.24
1,2,0.28,12.90
1,3,0.59,13.45
1,4,0.72,13.63
1,5,0.43,13.03
1,6,0.84,13.75
1,7,0.89,13.85
1,8,0.67,13.54
1,9,0.56,13.19
```

Case 1. Only distance and time is provided for the current year and assumed to be applied equally to all forecast years

```
1,1,0.64,4.57,0.64,4.7985,0.64,5.027,0.64,5.484
1,2,1.07,5.8,1.07,6.09,1.07,6.38,1.07,6.96
1,3,1.83,7.62,1.83,8.001,1.83,8.382,1.83,9.144
1,4,2.95,8.79,2.95,9.2295,2.95,9.669,2.95,10.548
1,5,4.07,11.01,4.07,11.5605,4.07,12.111,4.07,13.212
1,6,4.01,12.35,4.01,12.9675,4.01,13.585,4.01,14.82
1,7,5.39,15,5.39,15.75,5.39,16.5,5.39,18
1,8,3.05,10.01,3.05,10.5105,3.05,11.011,3.05,12.012
1,9,2.27,8.05,2.27,8.4525,2.27,8.855,2.27,9.66
1,10,1.43,6.25,1.43,6.5625,1.43,6.875,1.43,7.5
1,11,1.33,7.81,1.33,8.2005,1.33,8.591,1.33,9.372
1,12,1.88,9.02,1.88,9.471,1.88,9.922,1.88,10.824
1,13,1.86,8.38,1.86,8.799,1.86,9.218,1.86,10.056
1,14,2.08,8.55,2.08,8.9775,2.08,9.405,2.08,10.26
1,15,2.34,9.37,2.34,9.8385,2.34,10.307,2.34,11.244
```

Case 2. Distances and times provided for all years

Figure 23. Sample MPO Auto Time Matrix File

4.7 Check File Status

After the TAZ and CTPP files have been obtained and loaded into the proper subdirectory, the STOPS Main Menu should appear as shown in Figure 24. The label "FILES FOUND!" should appear next to Steps 2 and 4. If not, click on the "Update File Status" button. If Steps 2 or 4 are still not found, click on "4. List and Check TAZ and CTPP Files" to see which files do not exist in the proper subdirectory. As needed, obtain the proper files and click "Update File Status" until Steps 2 and 4 are listed as "FILES FOUND!".

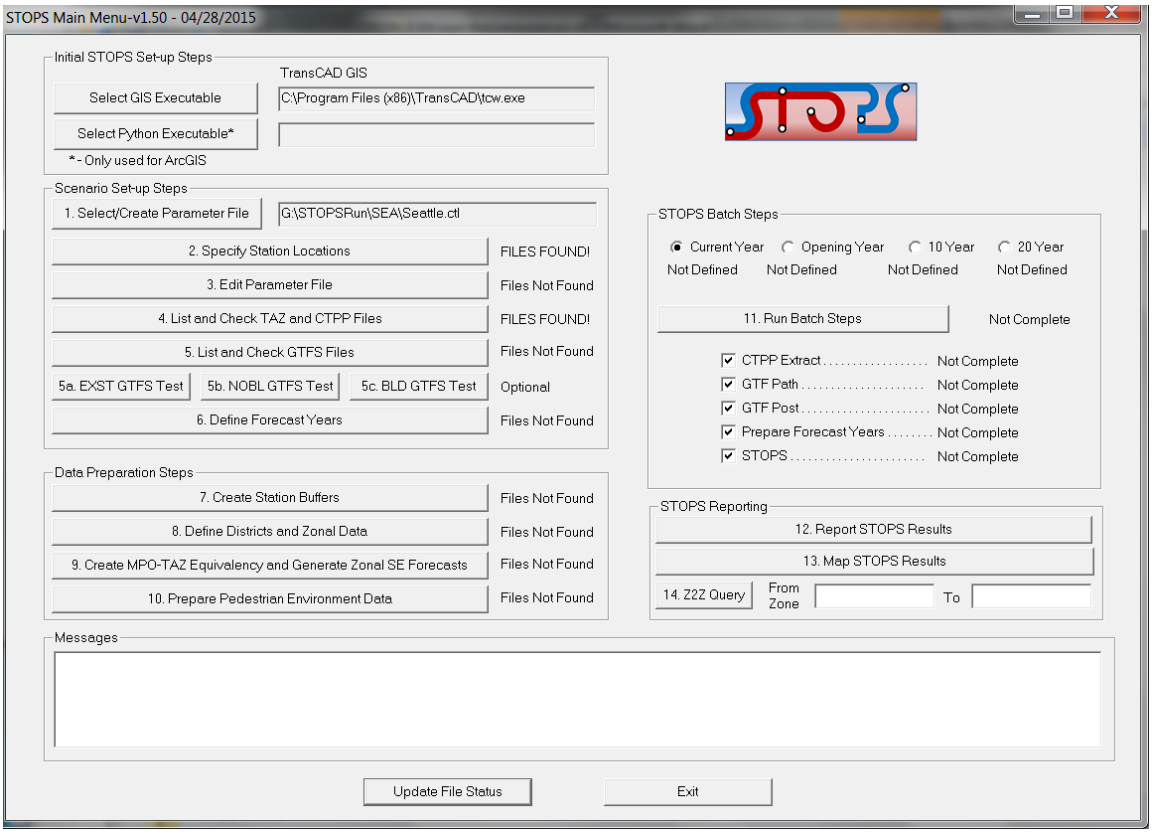


Figure 24. STOPS Main Menu After All TAZ and CTPP Files Are Loaded

4.8 Transit Agency Schedule and Supplemental Data

The General Transit Feed Specification (GTFS) is used to represent existing and scenario-specific transit services. STOPS also uses several extensions to this specification to represent opportunities for park-and-ride (PNR) access and for users to code an editlist file that can be used to make relatively simple changes to represent different scenarios (e.g., the introduction of a new rail line or rerouting buses to serve as feeder routes).

4.8.1 Overview of GTFS File Formats

Full documentation of GTFS is provided at https://developers.google.com/transit/gtfs/reference. This section provides an overview of the specification and indicates which GTFS components are used by STOPS to represent transit levels of service.

GTFS consists of a series of files that, together, represent the stops, routes, and scheduled operation of a transit system. In some areas, all transit services are provided by a single operator and in such cases a single set of GTFS files represent all or nearly all fixed route services in a region. In other areas, multiple operators provide service and GTFS files may be available separately for each operator or may be combined into a single master GTFS dataset. It is important for the user to know exactly which services are covered in each file so that STOPS has an accurate representation of transit services in the project corridor. Section 4.8.3 describes a publicly-available visualization tool that can help the user to understand the services coded in a GTFS file.

STOPS only uses a sub-set of the GTFS file structure as is briefly described, below. The full documentation (referenced above) provides a more comprehensive description of the full capabilities of GTFS. STOPS processes GTFS data using a program called *GTFPath*. This program reads GTFS data and a set of zone centroids and creates a matrix of zone-to-zone transit times that is similar in concept to transit skim files generated by conventional travel forecasting models.

GTFS uses a fully relational data model that depends on a series of ID fields to store key aspects of the schedule. These ID fields include:

- **Service_id** uniquely identifies a set of dates when service is available for one or more routes. A GTFS file can include routes that operate on Saturdays, Sundays, weekdays or any combination. GTFS files can also include different schedule "picks" so one file might include bus schedules for the spring, summer, and fall. The service_id is used to select just that portion of the schedule that operates on a given day. The "calendar.txt" file defines the beginning and ending dates and days of the week that apply to each service_id.

- **Stop_id** uniquely identifies a stop or station. Multiple routes may use the same stop. Many agencies separately code stops on each side of the street or each platform on a rail line. Stop_IDs are defined in the "stops.txt" file.

- **Route_id** uniquely identifies the route and is defined in the file "routes.txt." A route is a collection of [bus or rail] "trips" that generally follow the same alignment. All "trips" identified as a single "route" must share the same name, description, and type (e.g., bus, rail, light rail, etc.). Different trips within a route may serve a different series of stops allowing one route to include short-turn trips, route deviations and branches. The route information includes one data item of critical importance to STOPS—the route_type. A Route_type of "3" indicates "bus". All other route_types are considered by STOPS to be a fixed guideway option and thus can be used to estimate trips-on-project on a station-by-station basis. ***Users should carefully consider the most appropriate way to code a BRT project. BRT lines that are operating in a fully grade separated right-of-way may be perceived as being fixed guideway and probably should be coded as as route_type=0 (streetcar or tram). BRT routes that represent enhancements to bus service but operate in mixed traffic may be perceived as a more convenient bus route and should probably be coded as route_type=3.***

- **Trip_id** uniquely identifies a [bus or rail] trip. A trip is equivalent to each row [or column] in a typical time table and represents the departure of one bus or train from the originating

or turnback point of the route through to that vehicle's arrival at the destination terminal for the route (or turnback point).

In STOPS and GTFPath, service_id is a string variable that can be up to 100 characters wide. The other ID fields (stop_id, route_id, and trip_id) are also character strings of up to 100 characters wide for processing with STOPS and GTFPath. However, STOPS and GTFPath are much faster if the string length for these latter fields is limited to 9 characters. In some cities, the ID fields are much longer than 9 characters but most of these characters duplicate the service ID or another non-relevant character string. STOPS includes the capability to define a subset of the ID character string that can uniquely identify an ID within the 9 character limit.

Figure 25 presents a portion of the trip file from a GTFS file that represents service operated in 2010. The highlighted section of the file shows the trip_ids. Characters 1 to 8 represent the unique part of the trip_id and the remaining characters duplicate the service_id and are not needed to uniquely identify each trip.

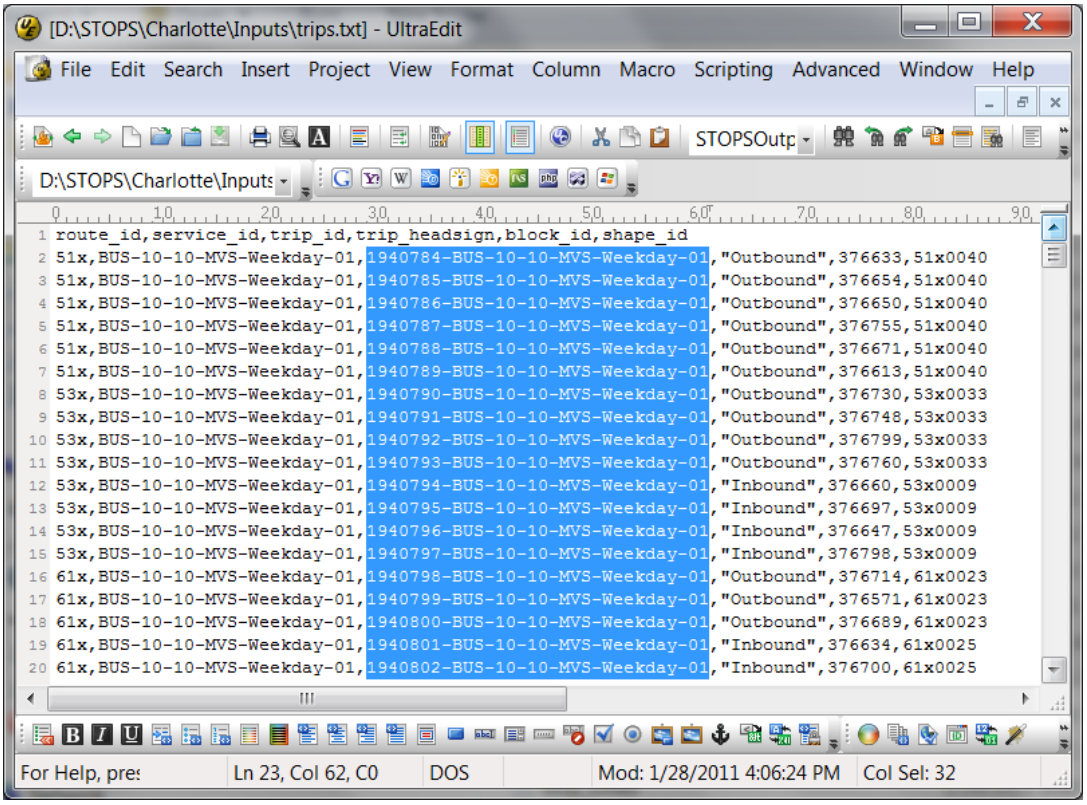


Figure 25. Sample trip file with Long Trip IDs

In this example, the user could significantly increase the processing speed by limiting the trip_id field to characters 1 to 8. Similar character ranges can also be defined for route_ids and stop_ids if that helps to identify a short, yet unique string within each ID field.

Figure 25 also illustrates another GTFS concept. GTFS files are structured as comma separated text files (with a .txt extension) that can include data in any order on a record. The contents of each file are defined in a header record. STOPS and GTFPath reads the header record and uses this information to determine where in each record the relevant data is found. GTFS files to be read by STOPS and GTFPath can process the required data in any order as long as it is properly identified in the header record. Extra fields can be included in the file and STOPS will ignore this extra information.

STOPS and GTFPath use the following GTFS files to prepare the level-of-service matrices:

- **Calendar.txt (Required unless the calendar_dates file is provided):** This file contains a listing of valid dates and days-of-week for each "Service_ID." Calendar.txt is a comma separated file with a header displaying the structure of the file followed by one record for each service_id. Each record includes:
    - Service_ID: a character ID that uniquely identifies a set of dates that appears at most once in the calendar file.
    - Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday: A series of binary fields that if set to 1 indicates that the service is operated that day. A 0 (zero) is used to indicate that this service is not operated.
    - Start_date and end_date. The starting and ending dates for the service in YYYYMMDD format.

A simple calendar file is shown in Figure 26.

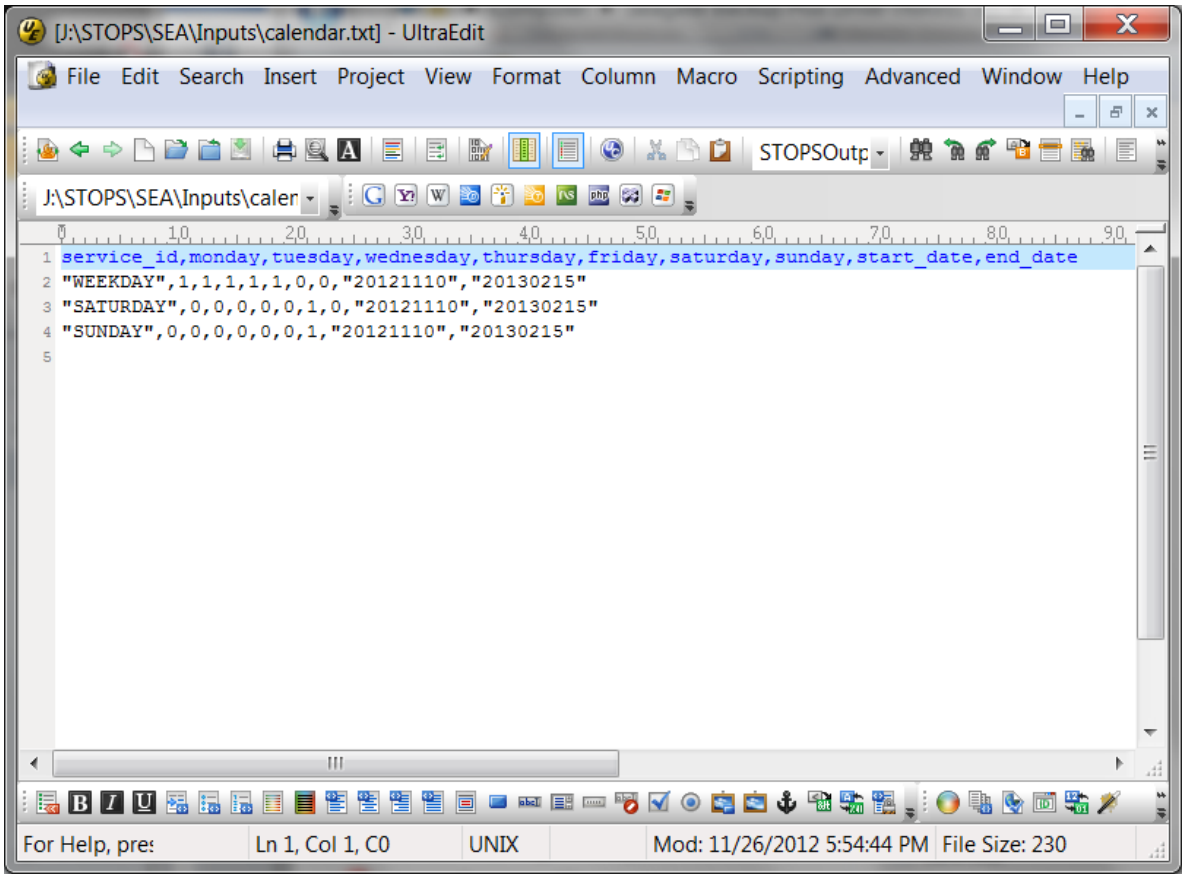


Figure 26. Sample GTFS Calendar File

- **Calendar_dates.txt (Optional unless the calendar.txt file is not provided then calendar_dates is required):** This file contains a listing of dates and exceptions to the schedule previously defined in the calendar.txt file. If the calendar.txt file is not provided, then each day of operation is an exception to the schedule and all dates and service_IDs must be coded. Calendar_dates.txt is a comma separated file with a header displaying the structure of the file followed by one record for each combination of day and service_ID for which an exception record is required. Each record includes:
    - Service_ID: a character ID that is coded on the route record to indicate the type of service operated (e.g., weekday, Sunday, holidays).
    - Date. The day that this exception applies to
    - Exception_type. Equals 1 if the service_ID is to be operated on that day. Equals 2 if the service_ID is not to be operated on that day. If multiple records are coded with the same service_ID, then the last record is used in processing.

- **Stops.txt (required):** This file contains a list of stop_ids, stop locations, and names to define stops and stations where passengers can board and alight from transit. The file has a header record followed by one record for each station or stop in the system. The following fields are required:
    - Stop_id: a unique 100-character identifier that identifies the stop or station. As noted above, STOPS is much faster if the stop_id is limited to 9 (or fewer) characters or if a character range can be specified that identifies a unique 9 (or fewer) character substring that leads to a unique stop_id.
    - Stop_name. A character string that names the stop.
    - Stop_lat. A real number containing the latitude of the stop.
    - Stop_lon. A real number containing the longitude of the stop.

  A sample stop file is shown in Figure 27.

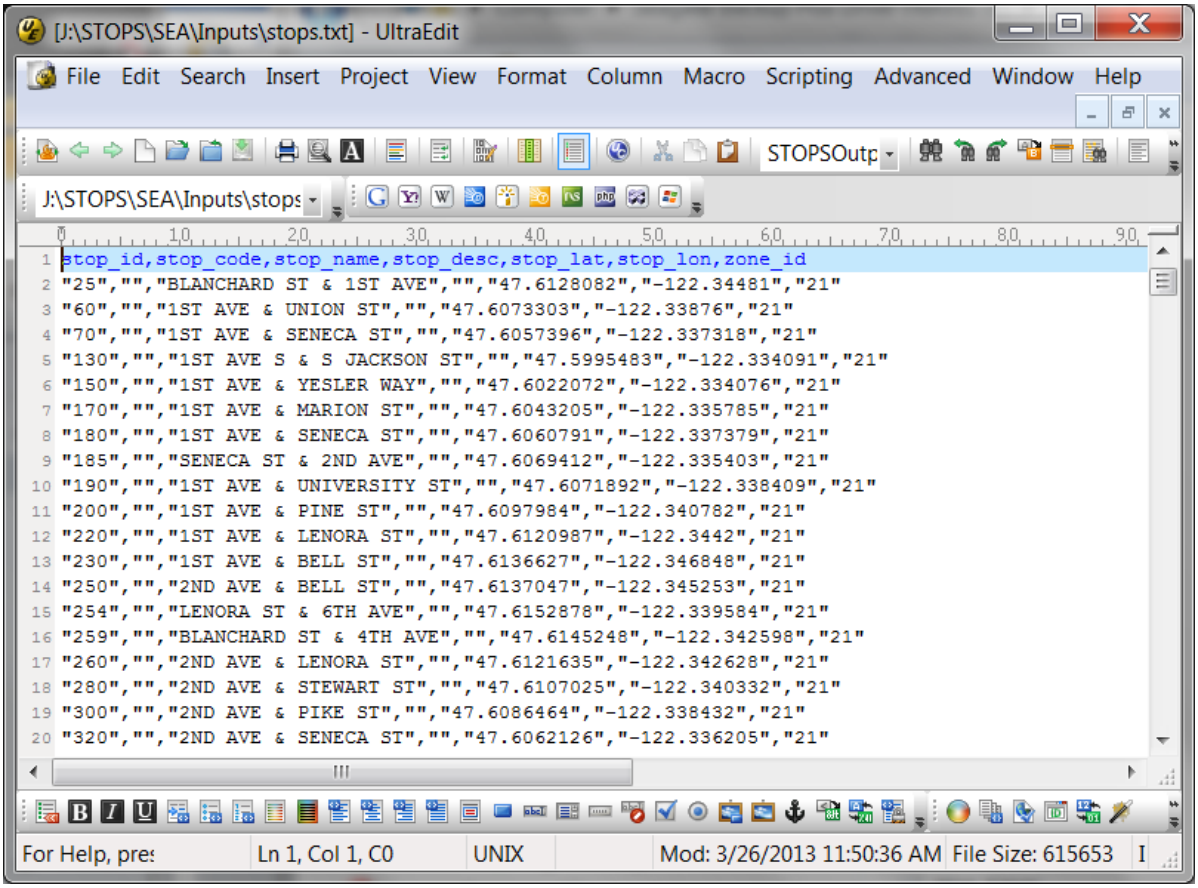


Figure 27. Sample GTFS Stop file

- **Routes.txt (required):** This file contains a list of route_ids, route descriptions and route types (transit modes). The file has a header record followed by one record for each route in the system. The route_id must appear at most once in the routes.txt file and is used to identify the name of the route as it appears in schedules and on transit vehicles. Most [bus or transit] trips generally follow the same basic alignment but trips within routes may offer turnbacks, route deviations, and branches. Of critical importance to STOPS, all trips on a route have the same route_type allowing STOPS to distinguish between fixed guideway and bus routes. That means that bus routes that are considered to be fixed guideway routes (e.g., BRT routes on exclusive rights-of-way) should be coded as type 0 (tram or streetcar). Routes.txt has the following fields:

    - Route_id. A unique id used to identify the route.
    - Route_short_name. A short description such as the route number which describes the route but not the destination.
    - Route_long_name. The full name of the route.
    - Route_type: A one-digit integer that best describes the type of transit. The value of 3 is used to denote non-fixed guideway bus routes. All other types are considered to be fixed guideway services. Projects can be comprised of any route type[15]. The full list of potential route-types are:

[15] The stops that comprise a project are identified in the station file. It is necessary to identify all bus stop_ids must be associated with a "station" in the station file that has a NewStation Code of "1".

- 0 - Tram, streetcar, LRT, (and BRT for STOPS)
- 1 – Subway, Metro
- 2 – Rail (intercity and long-distance
- 3 – Bus (short- and long-distance but not BRT in STOPS)
- 4 – Ferry
- 5 – Cable car
- 6 – Gondola or suspended cable car
- 7 – Funicular

A sample route file appears in Figure 28.

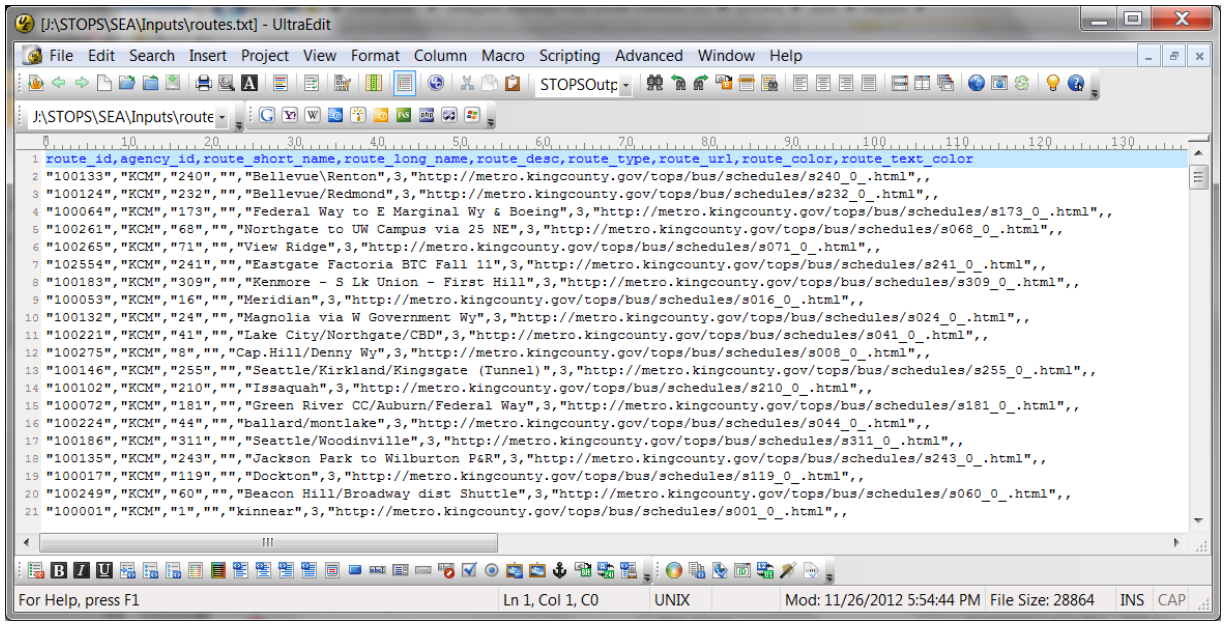


Figure 28. Sample GTFS Route File

- **Trips.txt (required):** This file contains a header record followed by one record for each [bus or rail] trip. A trip in this context refers to a transit vehicle [bus or rail] trip that occurs when a bus or train departs from the route beginning point (or a turnback point) and lasts until it arrives at the destination terminal or turnback. Required fields are as follows:

  - Trip_id. A unique ID identifying the trip.
  - Route_id. The ID of the route that describes this trip.
  - Service_id. The ID that describes the days this trip operates in the calendar.txt file.

Version 1.50 Highlight:

GTFS trip files can also include an optional block_id field. This field is used to indicate groups of trips that are served by the same vehicle. Starting with Version 1.50, passengers are allowed to remain on the bus between trips when the same block_id is used for each trip. This is particularly important in systems that interline routes. For example, route "A" on the north side of town may continue as route "B" on the south side. In this case, as long as two trips have the same block_id, through passengers have a no-transfer trip even though the route and trip have changed during the course of the journey.

A sample trip file is shown in Figure 29.

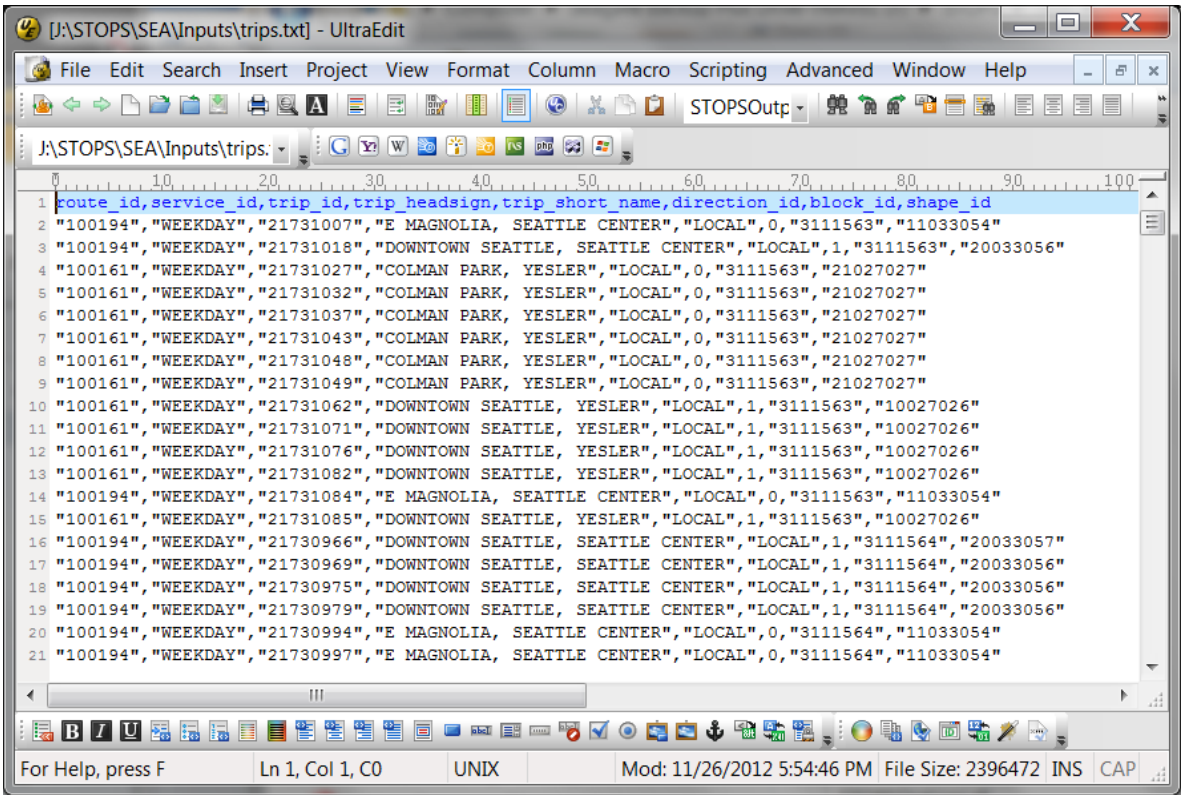


Figure 29. Sample GTFS Trip File

- **Stop_times.txt (required):** This file contains one record for each stop served by each trip and defines the times that the trip serves that stop. This file corresponds to each time value in a printed schedule. The key difference between the stop_time.txt file and printed schedules is that each stop on the route has a time record in the stop_time file[16] as

[16] In cases where the time is not known (i.e., the stop is not a time point and the agency does not estimate times for non-time points), then times may be left blank. In this case, STOPS interpolates the time based on the preceding and following time points and the relative straight line distance between stops. Note that 0:00:00 is considered to be midnight at the beginning of the schedule day. It is not the same as a blank value which is treated as a non-time point to be interpolated.

compared to most printed time tables in which time values are present for selected stops only (known as time points). The following fields are required:

- Trip_id. The ID of the trip represented by this record.
- Stop_id. The ID of the stop represented by this record.
- Arrival_time. The time that the trip arrives at the stop. This value is left blank if the time is not known and the time is to be interpolated based on preceding and following time points.
- Departure_time. The time that the trip departs from the stop.[17] This value is left blank if the time is not known and the time is to be interpolated based on preceding and following time points.
- Stop_sequence. A sequential number that indicates whether this record is the first, second, third, etc. stop that this trip makes.

Optionally, the stop_times file may include two other fields:

- Pickup_type. A "1" denotes that passengers may not board the vehicle at this stop[18]
- Drop_off_type. A "1" denotes that passengers may not alight the vehicle at this stop

A sample stop_time file appears in Figure 30.

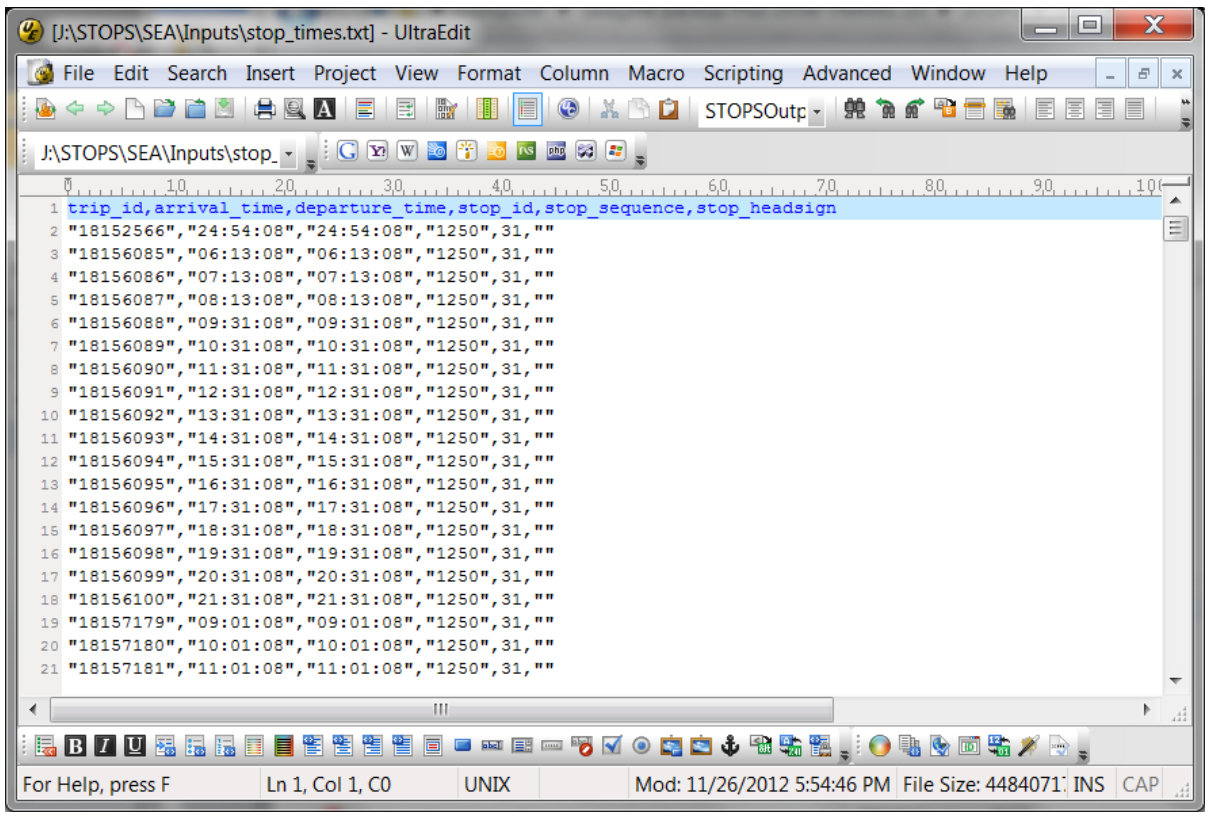


Figure 30. Sample GTFS Stop_Time File

[17] In most cases arrival and departure times are the same. They are different when the bus or train is scheduled to wait at the stop for more time than is necessary to receive and discharge passengers.
[18] GTFS uses codes "0" (the default) to indicate that passengers may board and alight at the stop. Codes"2" and "3" to identify stops that may be used by special arrangement with the driver or agency. STOPS treats codes 0, 2, or 3 as indicating that the pickup or drop-off can occur.

- **Frequencies.txt (optional):** This is an optional file that, if present, provides a start- and end- time interval during which a trip from the trips.txt file is repeated according to the headway specified in the frequencies file. When trips are defined in frequencies.txt, STOPS and GTFPath ignore the absolute values of the arrival_time and departure_time fields for those trips in stop_times.txt. Instead, the stop_times table defines the sequence of stops and the time difference between each stop. The exact times are generated from information in the frequencies file. The frequencies file includes the following fields:

    - Trip_id. The ID of the trip to be repeated.
    - Start_time. The first departure time from the first stop on the trip.
    - End_time. The latest departure time from the first stop on the trip.
    - Headway_secs. The headway ***in seconds*** between successive departures.

  A sample frequencies file appears in Figure 31.

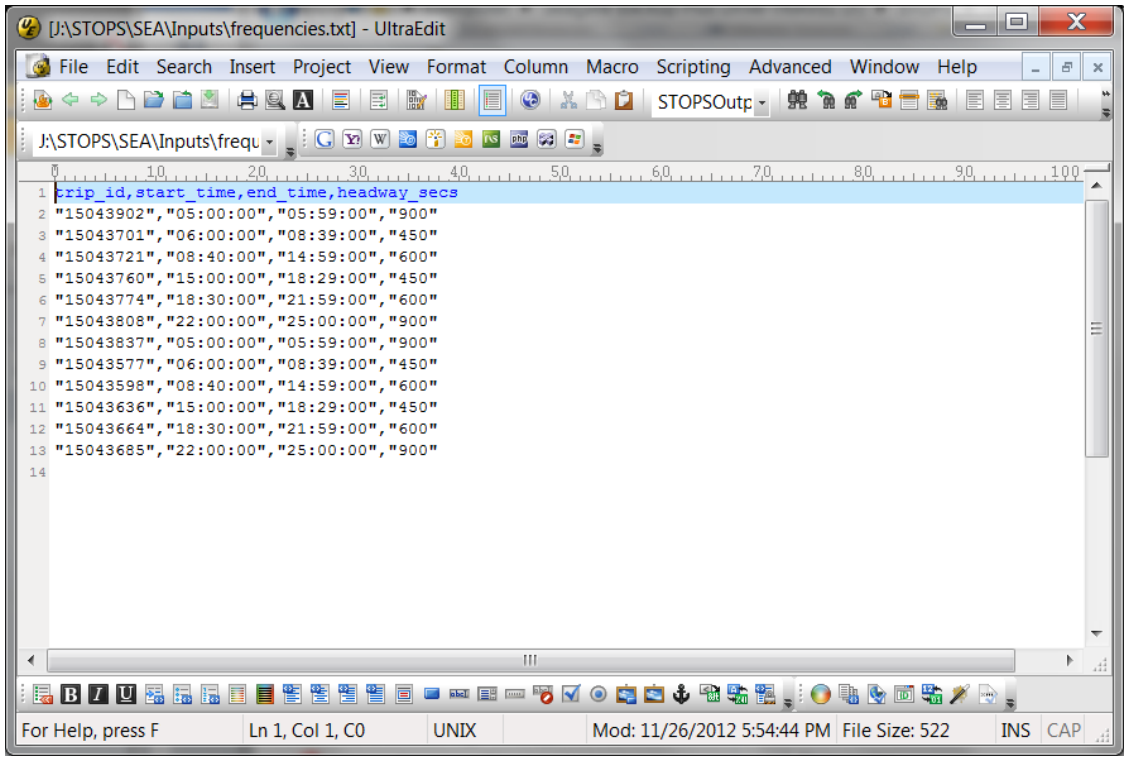


Figure 31. Sample GTFS Frequencies File

- **Transfers.txt (optional).**: The transfers.txt file contains information on the amount of time required to complete a transfer. If this file is not provided or if a transfer is not coded in this file, then STOPS automatically generates transfers between stops located within 0.25 miles of each other and computes the transfer time based on the straight line distance between the two stops traversed at a speed of 3 miles per hour. Any station grade separation time (0.5 minutes per level) and any transfer penalty time coded in the station file are added[19] to this time estimate. The GTFS station file provides the opportunity to override this estimate in cases where time is materially different. This file has the following fields

[19] Grade separation and penalty times for both the "from" station and the "to" station are added to the computed transfer time.

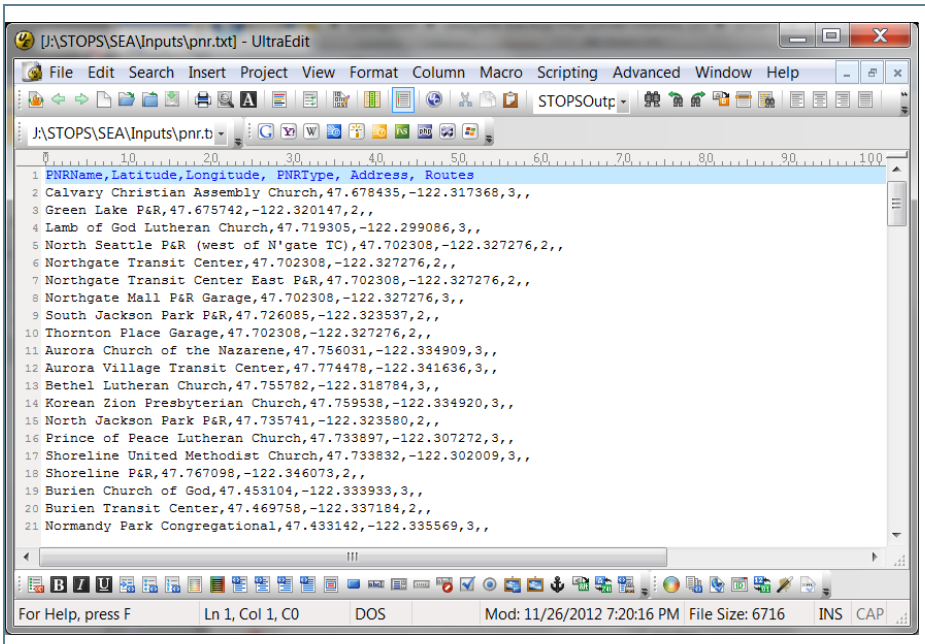
- From_stop_id. The stop_id used to define the stop where the transfer begins
- To_stop_id. The stop_id used to define the stop where the transfer ends
- Transfer_type. A code defined as follows
  - 0 – recommended transfer point (ignored by STOPS)
  - 1 – timed transfer point where the to bus will wait for passengers (ignored by STOPS)
  - 2 – requires a time specified in min_transfer_time to make the connection
  - 3 – transfers not allowed at this location
- Min_transfer_time. (Optional) The number of ***seconds*** required to complete this transfer for transfer_type = 2. If this field is not available, the min_transfer_time is assumed to be zero.

- **PNR.txt (optional STOPS extension to GTFS standard):** The PNR file is a STOPS-extension to the GTFS standard and allows the user to specify locations where travelers can park their cars prior to making a transit trip. One record is specified for each potential parking location which is defined in terms of latitude and longitude. STOPS and GTFPath compare this location to stops identified in the stops.txt file and all stops within 0.25 miles are connected to the PNR lot. The PNR.txt file has the following required fields.
  - Pnrname A character string with the PNR lot name.
  - Latitude. A real number with the latitude in degrees.
  - Longitude. A real number with the longitude in degrees.
  - Pnrtype. An integer that is used to define the scale of the PNR and its likely catchment area. In STOPS, these values are defined as follows:
    - 1 – End-of-line fixed guideway station – attracts trips up to 25 miles away. Also used when a major highway intersects the fixed guideway facility and the station effectively serves as an end-of-line station for these travelers.
    - 2- Formal fixed guideway or bus PNR lot-attracts trips up to 10 miles away.
    - 3 – Officially designated PNR lot in a shared facility – attracts trips up to 6 miles away. This designation is applied to lots in churches, shopping centers and similar settings with posted signage permitting transit PNR.
    - 4 – Unsanctioned PNR lots. Lots where parking for transit occurs but is not identified by the transit operator as a sanctioned PNR lot. This could include cases where private land owners make their property available for a fee and other cases where parking occurs without permission. Because this usage is dependent on driver knowledge of the local situation, this type of parking is limited to access distances of less than 3 miles.

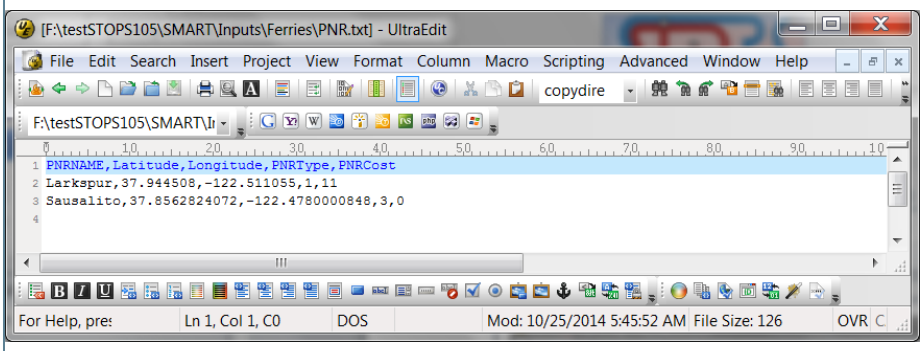
Version 1.50 Highlight:

The pnr.txt file also has an optional field, call "PNRCost" that, if present, contains the amount of additional impedance (in equivalent minutes of travel time) that should be added to the connection between the parking lot and nearby transit stops. PNRCost can be used to represent additional time required for vertical circulation in a parking structure or to represent a shadow price for purposes of constraining modeled parking utilization to parking capacity.

A sample PNR file is presented in Figure 32 showing examples with and without the PNRCost field.



Case 1. Without optional PNRCost Field



Case 2. With Optional PNRCost Field

Figure 32. Sample GTFS PNR File.

4.8.2 Managing GTFS Files and Creating Project Scenarios in STOPS

The GTFS file format provides a flexible structure for defining an individual transit operating agency's schedule of service. This is an important foundation for generating estimates of trips on a project but is only the beginning. STOPS must read multiple sets of GTFS files to represent:

- Corridors where transit service is provided by multiple agencies and schedule data is coded into multiple GTFS file sets.
- Multiple scenarios representing existing service, future year no-build and project-related service.

This section introduces several of the concepts that make it possible to read multiple GTFS files to cover both circumstances.

4.8.2.1 Separate Sub-Directories for Representing Multiple GTFS Files

In GTFS, simple file names such as calendar.txt, trips.txt, and stops.txt are used to define a set of schedules for one agency. With this structure, GTFS file sets for multiple agencies or different scenarios must be stored in different sub-directories.

This requirement is satisfied in STOPS through the concept of a "Subdirectory Prefix" ("Directory" or "Dir"). The Subdirectory Prefix is a character string that is added to the beginning of each GTFS file name to differentiate subdirectory locations. This capability can be used to do the following:

- Identify a set of subdirectories where each transit operator's files may reside. In San Diego, two GTFS files are used (Metropolitan Transit System and North County Transit District). In this case, two subdirectories might be used to represent existing schedules:
    - MTS2013\
    - NCTD2013\[20]

- Identify different scenarios. Continuing the San Diego example, assume that NCTD is constructing a project and that both MTS and NCTD have future year no-build scenarios. In that case, the following subdirectories might also be defined
    - MTSNoBuild\
    - NCTDNoBuild\
    - NCTDBuild\

These names are sub-directories of the inputs\ folder which is a subdirectory of the project folder where the control file is located. If the project control file is d:\STOPS\SD\sandiego.ctl, then the GTFS folders described above would be:

- D:\STOPS\SD\Inputs\MTS2013\
- D:\STOPS\SD\Inputs\NCTD2013\
- D:\STOPS\SD\Inputs\MTSNoBuild\
- D:\STOPS\SD\Inputs\NCTDNoBuild\
- D:\STOPS\SD\Inputs\MTSBuild\

The combination of root directory name and the sum of all of the GTFS subdirectory names may have as many as 200 characters. Much shorter name lengths are recommended for readability of reports and screens.

4.8.2.2 Simultaneous Processing of Multiple GTFS Files

As discussed in the previous section, transit service in some metropolitan areas is provided by multiple agencies and, in some cases, these agencies each generate their own GTFS files. STOPS provides the capability to read multiple GTFS files and generate a single set of paths that considers routes operated by all agencies. The STOPS User Interface requires the user to code at least one non-blank subdirectory name for all scenarios (e.g., existing, no-build, and build). Up to nineteen

[20] In a STOPS subdirectory prefix, a subdirectory is indicated when the prefix ends with a "\" character. If no "\" is present at the end of the subdirectory prefix, then STOPS will treat the prefix as a character string to insert at the beginning of each GTFS file name. This approach works in STOPS. However, the prefix + file name without an intervening "\" will not work with the GTFS data validation or visualization tools and are, therefore, not recommended.

additional GTFS files with non-blank subdirectory names may also be provided for each scenario to represent multiple operators.

Although a non-blank subdirectory prefix is required for each scenario, it is important to note that the same subdirectory prefix can be used for multiple scenarios. This could happen if the no-build and existing scenarios are the same or if the user wishes to test STOPS to determine "project" ridership for an existing rail line. In such cases, the user might type "MTS2013\" and "NCTD2013\" as the subdirectory prefix for the "Existing", "No-Build", and "Build" scenarios.

In many cases, this is all the user needs to do—specify all of the subdirectories that together should be read to generate a complete set of origin to destination paths for the modeling region. In some cases, however, this strategy will lead to an error caused by different agencies using the same stop, route, or trip designation to refer to different things. When this happens, the user can supply a 1-character suffix in the 10th character of each stop_id, route_id, and trip_id for the user-selected GTFS file set. For instance if the user supplies "A" as a suffix then trip 121 would be renamed as "121 A" and stop "65112" would be renamed "65112 A" in all references to these fields.

The user does not need to add the suffix to any field in the GTFS file set; STOPS does that automatically. The only places where the suffix needs to be hand-coded by the user are:

1. In the parameter file where other GTFS information is identified
2. In the station file (see Section 4.2) where the user needs to add the suffix to the GTFS ID fields.

The use of the suffix is an area where the user must know the nature of the data contained in GTFS files. In at least one city, an operator appeared to reference a stop node in another operator's GTFS. In this case the user should ***not*** specify a suffix (or specify the same suffix for both operators) so that STOPS can find the appropriate record. In another city, GTFS files contained many duplicate stop_ids[21] and the suffix function is an easy way to make sure that each file properly references GTFS components supplied by the originating agency.

4.8.2.3 Using STOPS to Automatically Edit GTFS Files to Create Alternative Scenarios (Editlist.txt file)

GTFS files are highly detailed representations of a transit operator's service that are designed to allow on-line mapping software provide directions to potential transit users. In most transit agencies, these files are prepared by the scheduling department using their timetable/run-cutting software systems. The GTFS files are the final product of a complex process to prepare efficient, accurate schedules to be used by drivers, dispatchers, and the traveling public.

STOPS takes advantage of this detailed information to calibrate the model to represent current year conditions. However, STOPS must also read GTFS files representing future year conditions with and without the project. These files must be created by the user unless the scheduling department has already been engaged to develop a proposed timetable for the project.

The simplest approach (for the forecasters) to generate the future no-build and build GTFS files is to utilize the schedule writers to build a future time table using their timetable/run-cutting software systems. This approach has the advantage that the resulting schedules will be based on the experience gained by the scheduling staff over many years and may result in a schedule that is

[21] Duplicate stops in this case appeared to refer to consistent points but the suffix capability eliminates the need to manually confirm that observation as being true throughout the region.

more accurate and more likely to be implemented. Unfortunately, scheduling staff are often focused on preparing the next round of schedules and may be unable to perform this task.

One alternative for developing a set of future year GTFS files is to use one of the software packages that provide GTFS editing capabilities. Some products with this capability may prove useful although they undoubtedly will require time to learn how to operate the software before the user can generate new GTFS files.

Another option is for the user to construct GTFS files by hand by editing the underlying text files to represent future scenarios. Since GTFS files are extremely complex with many inter-relationships, the resulting files should be carefully checked to confirm that the GTFS files are accurate representations of each scenario. This approach could be practical in cases where the schedule changes are relative simple between the existing GTFS files and the proposed future services.

The final option is to use the STOPS capability to read a file called editlist.txt (stored in the same subdirectory identified by the subdirectory prefix that contains a series of commands to adjust GTFS files. This capability is another STOPS extension to the GTFS standard.

4.8.2.4 Using Editlist

Even with the editlist function, the user is still responsible for manually editing the relatively simple files in the GTFS standard (stops.txt, routes.txt, trips.txt, and frequencies.txt). Editlist.txt is used to simplify the process of making routing changes to existing services in the stop_time.txt file. An important concept is that the stop_times.txt file contains the service that is offered to the traveling public. The other files (stops.txt, routes.txt, trips.txt, and frequencies.txt file) play a supporting role. If a route or trip exists, but there is no stop_time record, then no transit service is available for a traveler to use.

This means that if the user wishes to discontinue a route, it is sufficient to remove all of the route's stop_time records. There is no reason to eliminate the route from the route file or trips from the trip file and, depending on how these tools are used, deleting these records could cause errors. It is helpful to bear the following principle in mind:

> GTFS files are extremely complex and many opportunities exist to introduce serious errors. ***Therefore the user should make as few changes as possible to represent potential service changes.*** Nearly always that means adding necessary stops, routes, trips, and stop_times but seldom, if ever, deleting anything directly from the files. Existing services are best modified or deleted using the editlist.txt capability.

The following process can be followed to create a new GTFS file to represent a new scenario.

1. Copy an existing GTFS file set to a new directory.

2. Open the calendar.txt file in a simple text editor and make a note of the service_ids that can be used to represent weekday services (often Wednesday offers the most typical representation of a weekday) on a date that is consistent with other routes represented in the GTFS file. In most cases an existing service_id can be used although it is also possible to create a new service_id.

3. Open the stops.txt file in a simple text editor and add any new bus or fixed guideway stops. In most cases, the user should not delete or move an existing stop since these physical points still exist. Even though the user may delete service in later steps, STOPS still checks

the integrity of all routes and stopping patterns and will generate an error if these stop locations do not exist. When adding new points, search the existing stop database to make sure that duplicate stop_ids are not defined. STOPS will flag a duplicate stop_id as an error.

4. Open the routes.txt file in a simple text editor and add any completely new routes to the route database taking care not to re-use any existing route_id. New routes could include a new fixed guideway line or new feeder bus routes. Do not delete any existing route_ids unless the user also deletes all references to the route in the trips.txt, stop_times.txt, and frequencies.txt files. It is not necessary to change existing routes that are truncated or modified unless the user wants to modify the route description fields to reflect the new name.

5. Open the trips.txt file in a simple text editor and add a new trip for each new route in each direction. It is only necessary to add one new trip for each new route and direction since the frequencies.txt file can be used to generate the entire schedule over the course of a day. If trips are to be added to existing routes, then the user can either code one new trip for every added trip or to create one new trip and use the frequencies.txt file to add additional runs. The user should not delete trips from the trips.txt file unless all references to the trip in the stop_times.txt and frequencies.txt files are also removed using a text editor.

6. Open the stop_times.txt file and add all stop_time entries for the new trips. Existing routes that are modified need not be edited here since the editlist.txt command can be used to change existing routes more easily. If the user does modify stop_time entries for existing routes in this file, make sure to change all of the relevant entries since each route can have one record for each trip and each stop unless the frequencies.txt file is used.

7. Open (or create) the frequencies.txt file and add frequency records for each new trip to specify the peak and off peak frequency of service. STOPS considers waiting times for two periods of the day: Peak (7:00 AM to 8:59 AM) and Off-peak (12:00 noon to 1:59 AM). Since scheduled trips serving these time periods may begin before and extend beyond these time periods, the user should create schedule information for a broader period (e.g., 6-9 AM and 11 AM- 3 PM to make sure that all trips operating in the modeled periods are properly represented.

8. Open or create the editlist.txt file. This extension to the GTFS standard allows users to update existing services using a series of editing commands that are designed to apply to multiple trips and/or routes and facilitate consistent modification to trip routing.

An example editlist.txt file is shown in Figure 33. This file represents changes made to a GTFS file with an LRT (Route 501) to make it representative of bus-only services that existed before the introduction of the LRT. As shown in this example, the file is located in the PreLRT subdirectory and is, therefore, associated with that set of GTFS files.

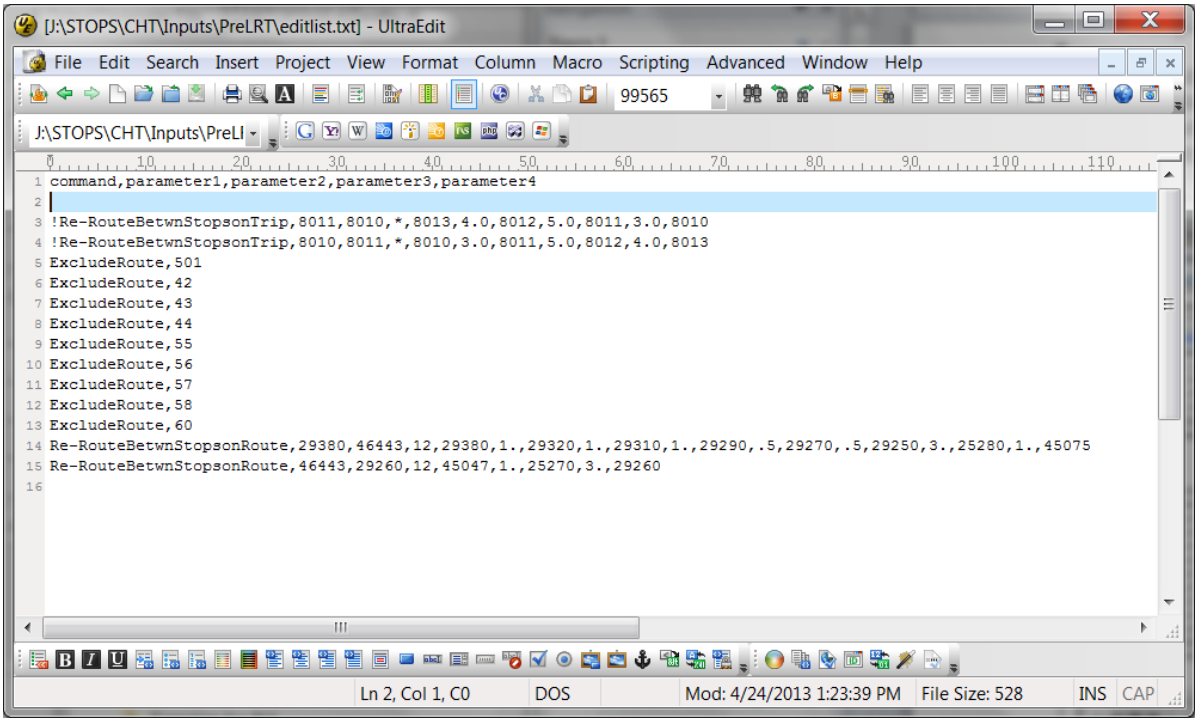


Figure 33. Sample GTFS Editlist File

The Editlist file begins with a header line that must contain the exact string of characters shown in the example. The first non-blank line following the header begins with a "!" that indicates that this line contains a comment which is skipped by STOPS when processing the editlist file.

All non-comments consist of a command followed by one or more parameters. Each command type can apply to a route, trip, stop or combination that exists in the stop_time file. The command only affects the stop_time file—the stop, route, and trip definitions contained in those files continue to exist without change even after the editlist commands are applied. The editlist commands that are applicable to STOPS are as follows:

- ***ExcludeRoute,[route_id].*** Directs STOPS to exclude all stop_time records for all trips operating with the route indicated by "route_id". This command is generally used in cases where a route no longer operates in a scenario. This might happen if a parallel route is eliminated when a new fixed guideway system is implemented. If "*" is coded as the route_id, then all routes are excluded but this wildcard should only be used if a later "include route" reinstates some of this service. Otherwise all routes are excluded and no transit paths can be built. In the sample file, route_id 501 (the LRT line) and several bus routes are removed from the schedule.

- ***ExcludeTrip,[trip_id].*** Directs STOPS to exclude all stop_time records for the trip specified by "trip_id". This command is used when a new fixed guideway service results in a loss of some trips on an existing route. If "*" is coded then all trips are excluded but this wildcard should only be used if a later "include trip" record reinstates some of this service.

- ***Re-RouteBetwnStopsonRoute,[stop_id-1],[stop_id-2],[route_id],[replacement string]. Re-RouteBetwnStopsonTrip,[stop_id-1],[stop_id-2],[trip_id],[replacement string].*** These commands instruct STOPS to look for cases where a route or trip travels between stop_id-1 and stop_id-2 (with or without intermediate points) and then replaces the sequence of nodes in the original stop_time file with the nodes and travel times contained in the replacement string. This command can be used to code a short turn-back on a route or to define a new deviation off of an existing alignment. In the sample file, Route 12 between 46443 and 29260 is replaced with a new beginning that involves traveling from 45047 to 25270 in one minute and then continuing to 29260 for another 3 minutes of travel time. Re-route commands are subject to the following rules:

    - Both stop_id-1 and stop_id-2 must exist in the stop_time file with stop_id-1 being before stop_id-2 in the order sequence for the trip being modified. Two re-reroute commands are required for 2-way routes to cover each direction of travel.

    - The replacement string consists of a series of stop_ids representing the new sequence of stops. Between each pair of stop_ids, the user must code the transit running time required to travel between the stops.

    - The replacement string must be anchored to the existing stop_id sequence at one or both ends. This means that the first stop_id in the replacement string must match stop_id-1 and/or the last stop_id in the replacement string must match stop_id-2. There are 3 kinds of replacements possible.

        - The first stop ID in the replacement string matches stop_id-1 and the last stop ID in the replacement string matches stop_id-2.
            - Example 1 (new routing between existing stops):
              Original Route: Rte1,stopA,stopB,stopC,stopD,stopE
              Re-routeBetwnStopsonRoute, stopB,stopE,Rte1,stopB,2,stopF,3,stopE
              Revised Route: Rte1,stopA,stopB,stopF,stopE
              Times. Original route up to B. Then, 2 minutes B-F, 3 minutes F-E

        - The first stop ID in the replacement string matches stop_id-1 and the last stop ID in the replacement string *does not* match stop_id-2.

            - Example 2 (extension to the end of the line):
              Original Route: Rte1,stopA,stopB,stopC,stopD,stopE
              Re-routeBetwnStopsonRoute, stopD,stopE,Rte1,stopD,2,stopE,3,stopF
              Revised Route: Rte1,stopA,stopB,stopC,stopD,stopE,stopF
              Times. Original route up to D. Then, 2 minutes D-E, 3 minutes E-F
            - Example 3 (replacement to the end of the line):
              Original Route: Rte1,stopA,stopB,stopC,stopD,stopE
              Re-routeBetwnStopsonRoute, stopC,stopE,Rte1,stopC,2,stopF,3,stopG
              Revised Route: Rte1,stopA,stopB,stopC,stopF,stopG
              Times. Original route up to C. Then, 2 minutes C-F, 3 minutes F-G
            - Example 4 (short turn back at end of line):
              Original Route: Rte1,stopA,stopB,stopC,stopD,stopE
              Re-routeBetwnStopsonRoute, stopC,stopE,Rte1,stopC,2,stopD

Revised Route: Rte1,stopA,stopB,stopC,stopD
Times. Original route up to C. Then, 2 minutes C-D

- The first stop ID in the replacement string *does not* match stop_id-1 and the last stop ID in the replacement string matches stop_id-2.

  - Example 5 (extension to the beginning of the line):
    Original Route: Rte1,stopA,stopB,stopC,stopD,stopE
    Re-routeBetwnStopsonRoute, stopA,stopB,Rte1,stopQ,2,stopA,3,stopB
    Revised Route: Rte1,stopQ,stopA,stopB,stopC,stopD,stopE
    Times. Original route after B. Prior to B times are computed backwards using 3 minutes A-B, 2 minutes Q-A
  - Example 6 (replacement to the beginning of the line):
    Original Route: Rte1,stopA,stopB,stopC,stopD,stopE
    Re-routeBetwnStopsonRoute, stopB,stopC,Rte1,stopQ,2,stopR,3,stopC
    Revised Route: Rte1,stopQ,stopR,stopC,stopD,stopE
    Times. Original route after C. Prior to C times are computed backwards using 3 minutes R-C, 2 minutes Q-R
  - Example 7 (short turn at beginning of the line):
    Original Route: Rte1,stopA,stopB,stopC,stopD,stopE
    Re-routeBetwnStopsonRoute, stopA,stopC,Rte1,stopB,2,stopC
    Revised Route: Rte1,stopB,stopC,stopD,stopE
    Times. Original route after C. Prior to C times are computed backwards using 2 minutes B-C

- Except in the case of a new beginning to the route, the arrival/departure times in the stop_time file are retained for the section of route prior to the change. Travel times following the insertion of the new stops are updated based on the stop-to-stop travel times contained in the replacement string. When a new beginning is coded, then the stop_time arrival/departure times for the existing route after the insertion point are retained and the arrival/departure times for the new beginning sequence are estimated from the stop-to-stop running times contained in the replacement string.

4.8.3 Visualizing GTFS Data

GTFS data are very complex and must be carefully checked before using this data as an input to STOPS. Review is particularly important when new files are created to represent proposed services such as a new rail line and the related bus service changes. The Google developers web site includes two tools that can be used to verify and to visualize a GTFS feed.

The following steps are required to use the feed validator and feed visualization tools:

1. Download the latest version of transitfeed-windows-binary-v.v.vv.zip (v is version information) and extract the contents to a directory on your hard drive. The zip file can be downloaded from https://developers.google.com/transit/gtfs/reference. Select the "Tools" option and then "feedvalidator" and "project download page". Then click on the most recent version of "Prebuilt Windows versions of FeedValidator, ScheduleViewer and other tools"

2. Locate the subdirectories containing GTFS data to be tested and viewed. These subdirectories may be a one of the input directories described in Section 4.8.2.1 or an output GTFS file generated by STOPS[22]. The end of this section describes the advantages of reviewing output files rather than the input files.

3. Drag the directory identified in Step 2 to the feedvalidator application located in the directory created in Step 1. The program will open a browser and display the results of the analysis as shown in Figure 34.

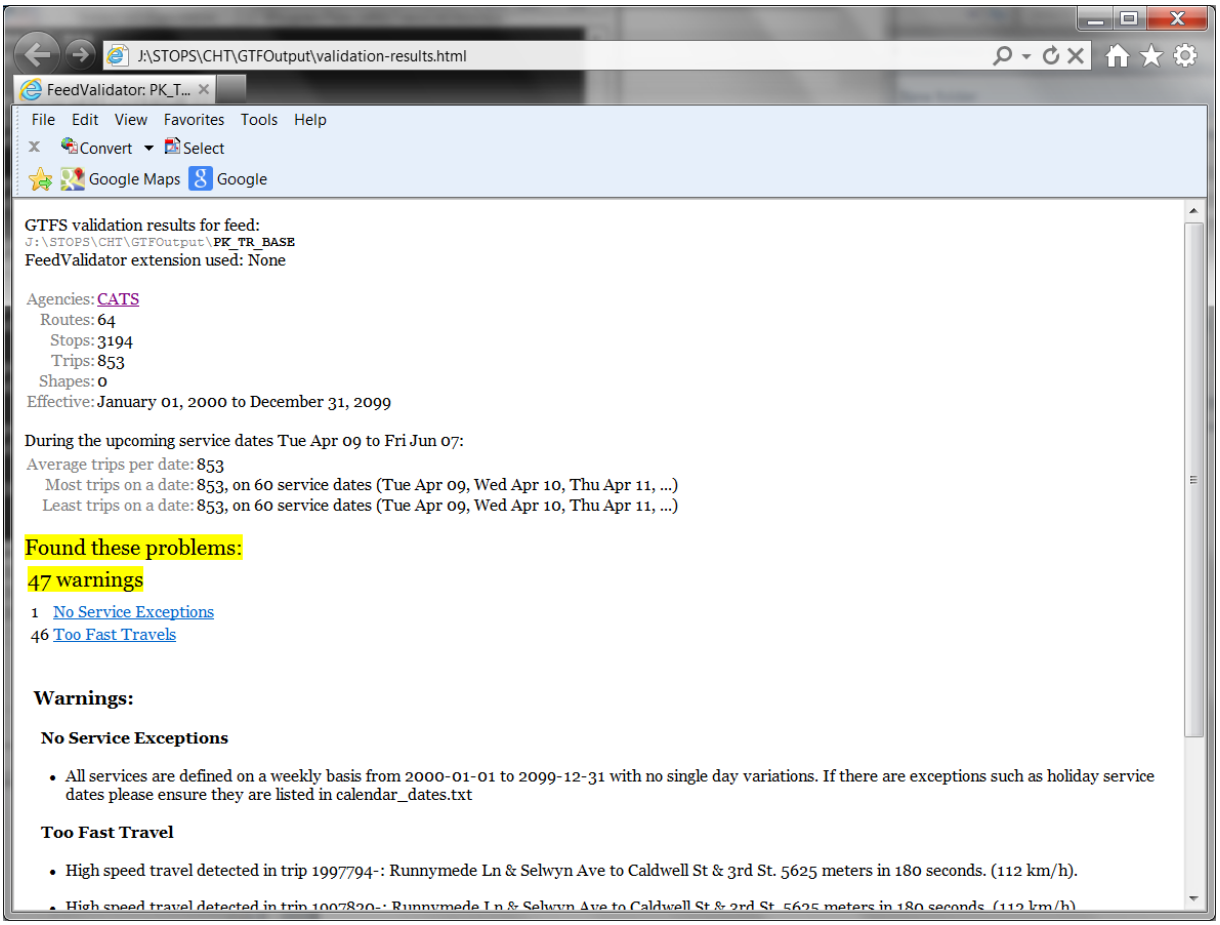


Figure 34. Output from GTFS Feed Validator

4. Drag the directory identified in Step2 to the schedule_viewer application located in the directory created in Step 1. The program will open a console window as shown in Figure 35 which (after a few minutes) directs the user to open a browser window and type a localhost http: address. After this is done, the window shown in Figure 36 appears. Select each route and a trip time to view that route's coding. As shown in this example, the re-routing of

[22] STOPS Step 5a can be used to generate two sets (peak and off-peak) of output GTFS files for the Existing (EXST) scenario for use with feedvalidator and ScheduleViewer. These files appear in the GTFOUTPUT\PK_TR_EXST\ and GTFOUTPUT\OP_TR_EXST\ subdirectories. Steps 5b and 5c generate similar GTFS outputs for the no-build (NOBL) and project (BLD-) scenarios. These output files include the effects of the multiple GTFS files, the editlist commands, the frequency specification, and hand-entered edits to the GTFS file set.

some trips on Route 12 (using the STOPS editlist capability) was mis-coded leading to an unintended route diversion. When the mis-coded stop was corrected, the route returned to the intended alignment.

Although scheduler_viewer is a powerful tool, the user should be aware of several limitations. First, it is not programmed to handle PNR or editlist files (STOPS extensions to the GTFS standard) so these changes are not displayed. Second, it does not combine GTFS files from multiple agencies, and third, it does not process the frequencies.txt file so the route and trip listing may not be complete.

To work around these limitations, STOPS and the GTFPath program can be used to generate an output GTFS file that includes combines GTFS from multiple agencies and apply frequency and editlist commands. The use of this command is described in Section 4.8.7.5.

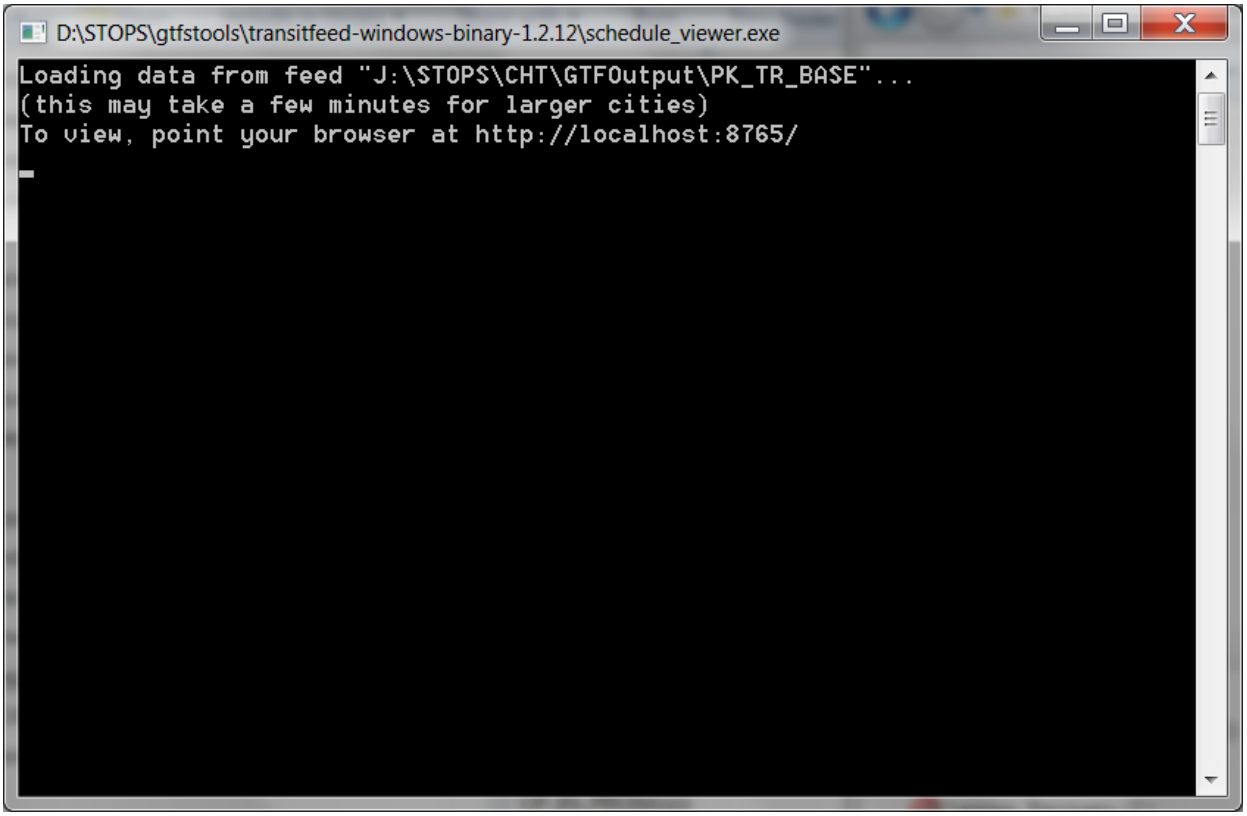


Figure 35. GTFS Schedule Viewer Console Window

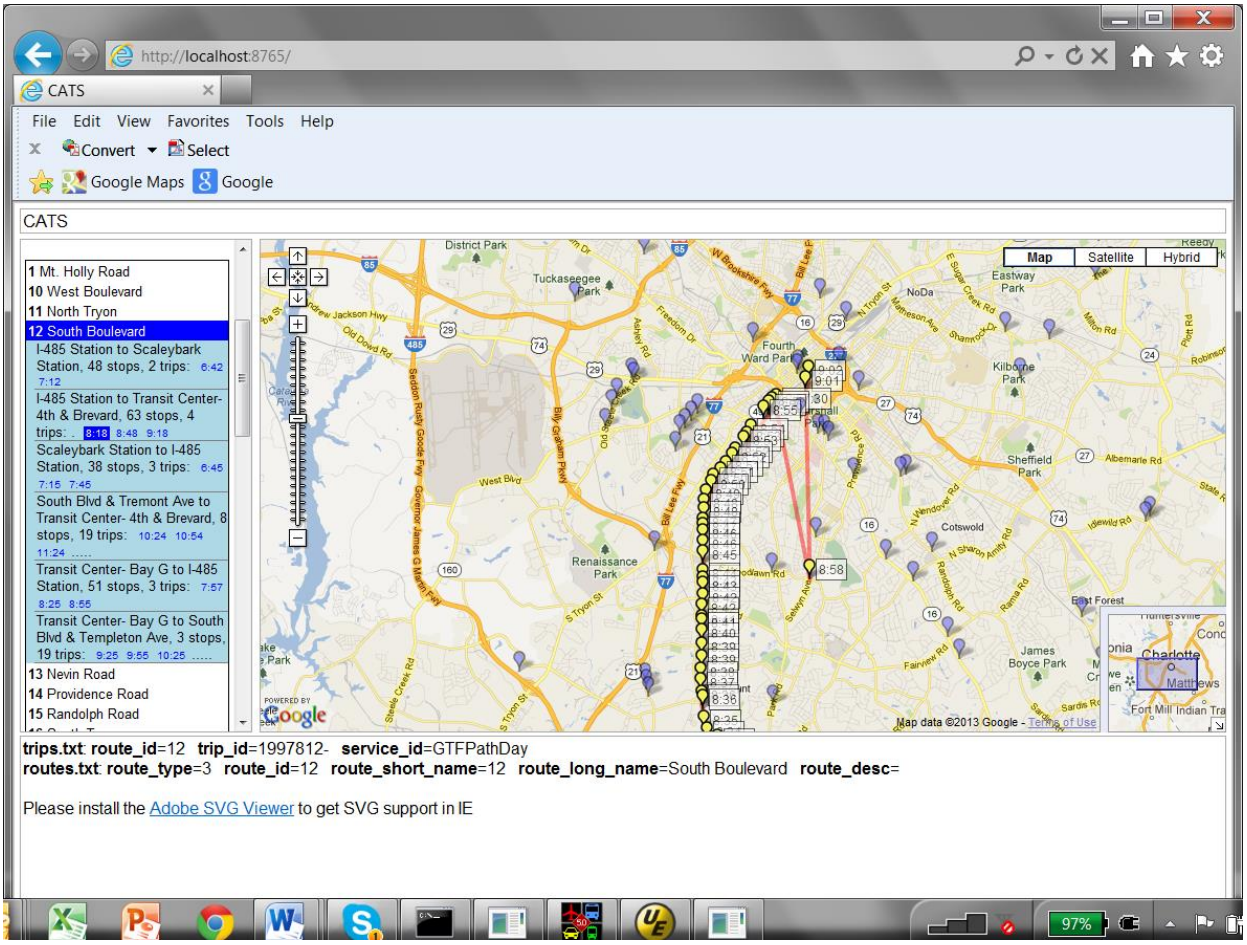


Figure 36. GTFS Scheduler Viewer Window Showing Error in Route 12 Re-Routing

4.8.4 Obtaining GTFS Files

In many cities, GTFS files for the current transit schedule are available on-line for public use. A listing of publicly-available GTFS files is found at:

http://code.google.com/p/googletransitdatafeed/wiki/PublicFeeds

Many agencies that do not make their feeds public still create these files so that on-line mapping tools can help customers plan trips. One good way of determining whether an agency generates this data is to go to Google Maps, select "Get Directions" and choose the transit option. Try to build a path between an origin and destination in the corridor to see if the agency has provided Google Maps with a transit feed.

In cases where the transit feed is not publicly available, it might be obtained from the agency's scheduling department. Even if the agency does not generate a feed, the agency's scheduling software may be able to generate a GTFS file set for use in STOPS.

4.8.5 Setting up GTFS File Characteristics and STOPS Parameters in the Parameter File

This section illustrates the steps needed to configure the STOPS parameter file to recognize the different GTFS files that will be used in STOPS. This process begins by selecting "3. Edit Parameter File" and reopening the parameter screen and entering information for GTF File Set 1. If the corridor has multiple agencies and multiple GTFS file sets, then it may also be necessary to complete GTF File Set 2, 3, and 4. An example screen is shown in Figure 37. In this example, King County Metro (KCM) was selected to be GTF File Set 1 and Sound Transit (SND) was selected to be GTF File Set 2.

Begin with GTFS File Set 1. This block is always part of the STOPS analysis since there always must be at least one corridor agency for STOPS to run. If there are multiple agencies in the corridor, select one to appear in this block (In the case of multiple agencies, it doesn't matter which agency is stored in which block). Define the subdirectory names that are desired for the existing, no-build, and build alternatives. In the example, these subdirectory prefixes are "KCMEXIST\", "KCMNOB\", and "KCMBLD\", respectively. As can be seen in File Set 2, it is possible for the same directory names ("SND\") to be used in all three fields if the service is the same in all three scenarios.

Next define the Optional Suffix as described in Section 4.8.2.2 and the date of a typical weekday that is covered by the GTFS file. In this example, no suffix was required so this field is left blank and a typical day is specified as 2/13/2013. This date was found by reading the calendar file and selecting a weekday (a Wednesday in this example) that is included in the file. It is important that the selected day be included in the GTFS file set but any qualifying day will generate the same STOPS results.

Finally, select the character position ranges for Route ID, Trip ID, and Stop ID. As discussed in Section 4.8.1, STOPS is faster if a 9-character string can be used to uniquely identify each route, trip, and stop. In the example, character numbers 1-9 were selected for King County Metro while Sound Transit was left at the default values of 1-100. As it happens, both transit agencies always use short keys of 9 characters or fewer so it isn't necessary to restrict the character position numbers except to illustrate the point. In most cases, GTFS files use relatively short keys so the column restrictions are seldom necessary. The user should, however, confirm this fact by examining each agency's GTFS files prior to use.

Repeat this entire process for the second, third, and fourth agencies with separate GTFS files as needed to represent corridor transit services. If more than 4 GTFS files are required, the "Next page…" and "Previous page…" buttons may be used to bring up GTFS file sets 5 to 20.

Before leaving the parameter file, the user should also set the STOPS parameters at the bottom of the dialog. The first six parameters represent the ratios of various trip purposes and are pre-populated with national averages from on-board transit surveys obtained from the STOPS calibration cities. These ratios can be updated with information from local on-board transit surveys if a reliable estimate exists. Ratios that may be entered into STOPS include:

- The ratio of Home-Based Other (HBO) linked transit trips to Home-Based Work (HBW) linked transit trips separately for traveler households with 0, 1 or 2 or more cars.
- The ratio of Non-Home Based (NHB) linked transit trips to all Home-Based (HB) linked transit trips, separately for traveler households with 0, 1, or 2 or more cars.

The user is also allowed to enter a parameter that indicates the degree to which fixed guideway transit is more visible to the traveling public than local bus. In general this parameter should be set to 1.0 unless the fixed guideway system has some characteristic that makes it more similar to local bus than is usual.

Finally, the user can select the Station Group Calibration Approach that will be employed when running stops. Options are:

- 00 – (none selected). The user has not selected a Station Group Calibration Approach. In this case, STOPS defaults to Type 1, no calibration.
- 01 – No Group Calibration. In this case, STOPS will not use station group information that was provided for the existing scenario to adjust model results for the base, no-build, or build. A no-group calibration run should always be prepared to help understand the expected ridership without any of the adjustments introduced by station calibration. In many cases, the ridership estimate generated with this option may be the most reasonable since it skips the process of applying station group adjustments that run the risk of distorting transit ridership patterns.
- 06 – Static Group Calibration. In this case, STOPS computes station group adjustments for the existing scenario and then applies the exactly same set of zone-to-zone adjustments for the no-build and build scenarios. This means that even when a zone-to-zone trip changes station from the existing scenario to the no-build or build scenario, the same adjustments that were developed for the existing scenario will be applied in the no-build and build case. This approach has the advantage that estimates of the change in regional linked or unlinked trip will be directly related to the change in level-of-service between the no-build and build scenarios and not influenced by trip factors increasing or decreasing because of use of different station factors. The downside of this approach is that these factors are applied to specific access mode and path-type combinations so a project that involves a different mode or a different access type will not have the benefit of the station group factor.
- 07 – District Ks-limited. In this case, STOPS generalizes the factors that were developed in for the existing scenario to the district level. These factors are still developed for individual combinations of access mode and path type but because they are generalized to the district level, these values are less subject to upward and downward spikes in type 06 that could affect individual interchanges. In type 07, the adjustments are limited to the range of 0.60 to 1.40. This means that the adjustments attempt to make minor corrections to observed ridership but do not correct for more serious problems that may cause estimated ridership to vary from observed ridership.
- 08 – District Ks-full. This case is similar to type 07 except that a broader range of factors are allowed. In this type, factors are limited to the range of 0.30 to 2.00.
- 09 – Full Group Calibration. This option is most like the STOPS v1.01 – v1.04 station group calibration process. In this case, factors are developed for each on- and off-stop group combination for the existing scenario and applied to the no-build and build cases depending on the stops used in each alternative. For cases where there is a comprehensive database of station (and/or bus stop) ridership and where the project is unlikely to change the assigned station group, then this technique may be most appropriate. If the station groups change, this method does introduce the risk that estimates of changes to overall linked or unlinked trips may not be reasonable.

Version 1.50 Highlight:

The recommended setting for the visibility factors is different in STOPS Version 1.50 than in prior versions. Be sure to update the visibility factor to 1.0 unless there is some characteristic of the fixed guideway system that causes passengers to perceive this mode as being more similar to bus. In such cases, a visibility factor less than 1.0 (as low as 0.0) may be appropriate.

STOPS v1.50 has a new parameter that affects the approach used for Station Group calibration. Type 9 is most like earlier version of STOPS. If the user does not specify a calibration approach when creating a new run (or converting from earlier versions of STOPS) then STOPS will now run without any station group calibration. ***The examples shown in the remainder of the documentation assume that Calibration Type 9 is selected by the user. Note that the user must change the selection from Type 0 to Type 9 in order to replicate the examples in this manual.***

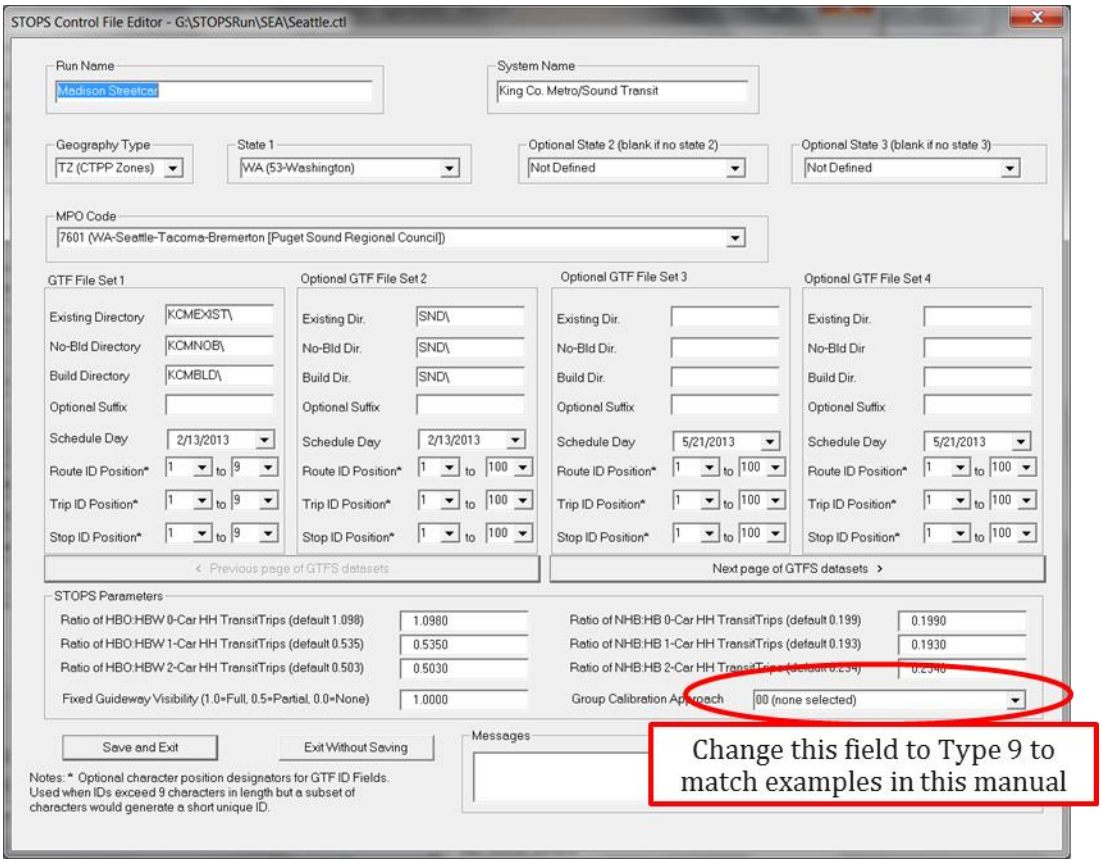


Figure 37. Defining GTFS File Characteristics and STOPS Parameters

4.8.6 Identifying Required GTFS Files and Sub-Directories

Once the GTFS file characteristics have been defined, select "5. List and check GTFS files" to generate a listing of all required and optional GTFS files that will be used in the analysis. A series of three screens will appear identifying all GTFS files to be used in the Existing Scenario, the No-Build Scenario, and the Build Scenario. An example is shown in Figure 38.

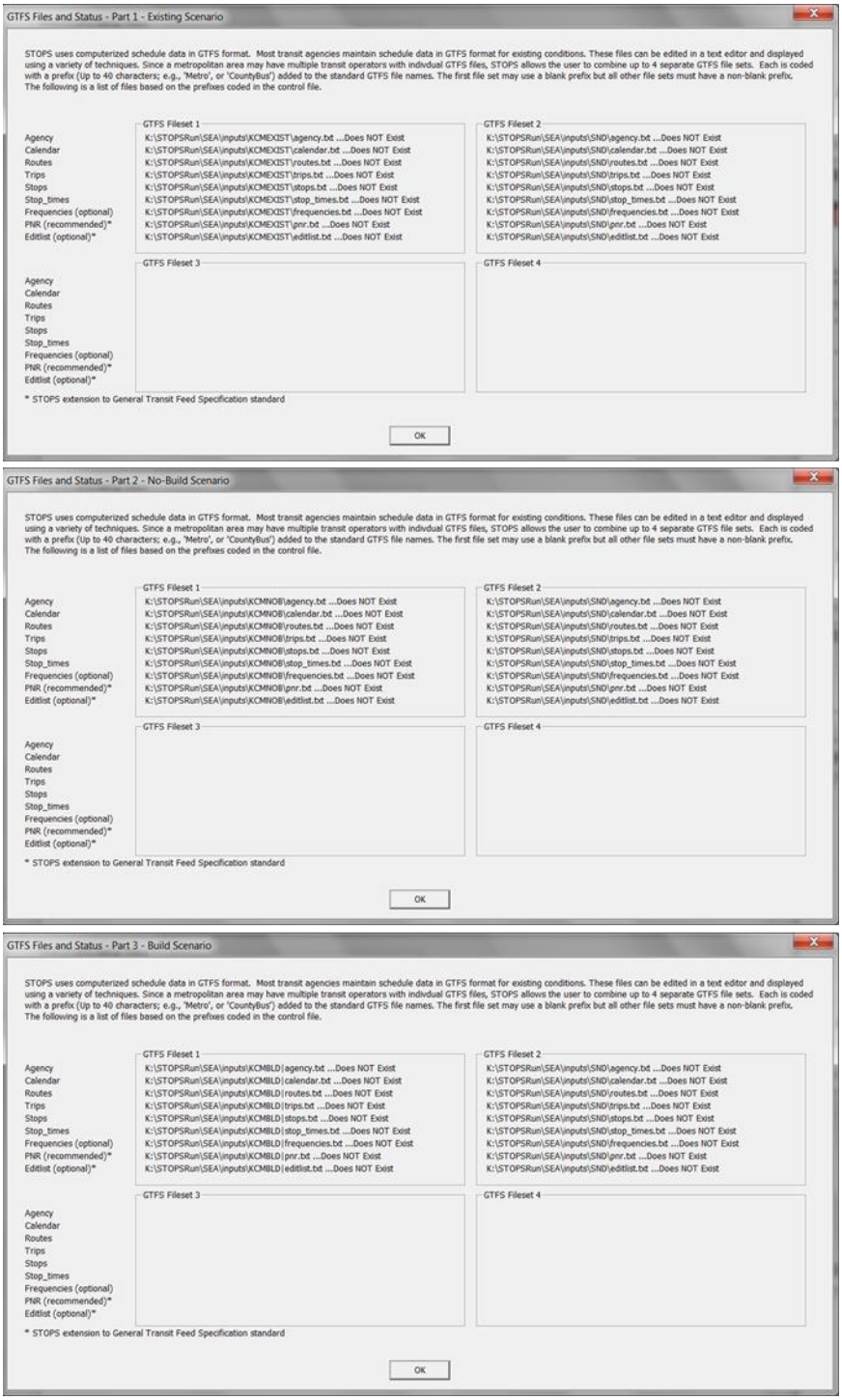


Figure 38. Example GTF File Status Screen

4.8.7 Creating GTFS Sub-Directories and Data Files

In many cases, the GTFS files obtained from the transit agency represent the existing case without modification and can be copied into the "Existing" subdirectory. In the example discussed in the previous section, the user should create a subdirectory of the "inputs\" directory that is named "KCMEXIST\". The existing King County Metro GTFS Files would be copied into this subdirectory if they properly represent the existing calibration scenario. Likewise in the example given above, the user would create a "SND\" subdirectory and store GTFS files from Sound Transit in that location. The contents of each of these directories are shown in Figure 39. Note that there are fare, agency and other files present that are part of the GTFS file set but are not read by STOPS. These files are present to ensure that the feed validator works properly and should always accompany the other GTFS files.

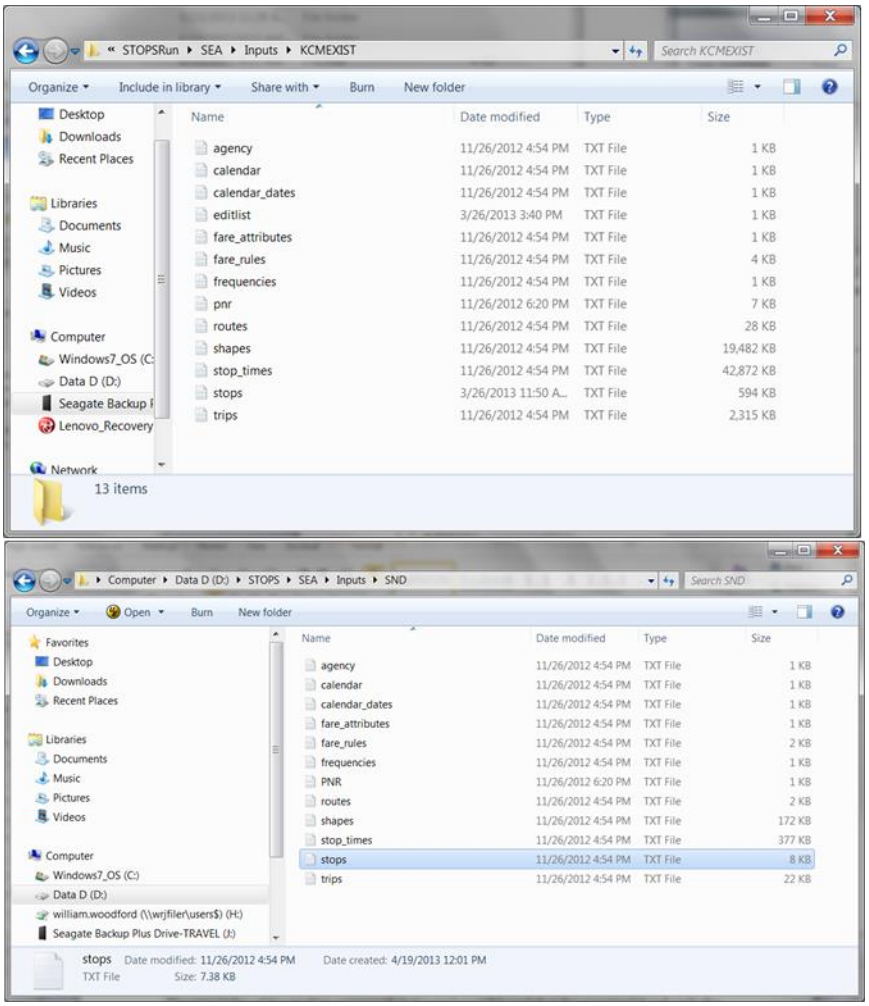


Figure 39. Contents of KCMEXIST\ and SND\ GTFS Subdirectories

Next, the user must create GTFS files for the King County Metro No-Build Build Alternatives and place these files in the "KCMNOB\" and "KCMBLD\" subdirectories of "Inputs\". The easiest approach (for the modeler) is to obtain pre-built GTFS files representing each scenario from the scheduling department and copy them to these subdirectories.

The remainder of this section assumes that this isn't possible and that the user must hand-code the project modifications.

4.8.7.1 Description of Illustrative No-Build and Build Scenarios

This section illustrates principles associated with coding GTFS scenarios for STOPS. It will build on the Seattle example already discussed. Two scenarios will be defined[23]:

- No-Build. Assume that the existing South Lake Union (SLU) streetcar that currently terminates at Westlake/Olive is programmed to be extended south one stop to a new transfer point that also serves the Sound Transit Central Link Westlake station. No other service changes are foreseen.
- Build. Assume a new streetcar line is constructed between Madison/5th Avenue and Madison/Broadway with an intermediate stop at Boren Avenue. Assume that the line runs on 10 minute headways in the peak period and 15 minutes in the off-peak. Also assume that buses on 3rd Avenue deviate off of their existing route to service the 5th Avenue station.

The example that follows assumes that the user has already downloaded the existing GTFS files for King County Metro and Sound Transit and stored these files in the "Inputs\Exist\" and "Inputs\SND\" subdirectories.

4.8.7.2 Coding the Existing Alternative

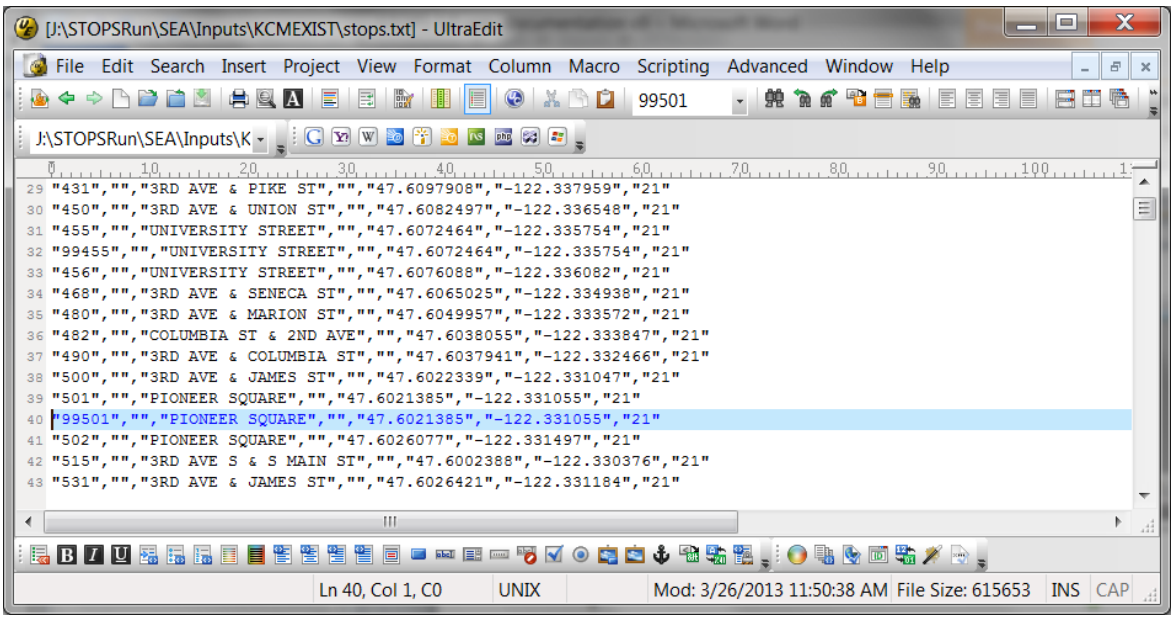
In most cases, the GTFS files obtained from the local transit agency can be used without modification. Occasionally, however, these files must be adjusted for use in STOPS. Seattle presents one of these cases. If a fixed guideway service and a bus use the same set of stop_ids (e.g., in the Seattle Bus/LRT tunnel), then the user should create a separate set of stop_ids for the LRT and reroute the LRT onto the alternative stop_ids. As shown Figure 40, stop_ID 501 is copied and named 99501 to represent a new LRT-only stop at the same location (Pioneer Square). As always, when new stop_IDs are added to the stop file, it is important to confirm that this stop doesn't duplicate the ID of another stop. The following new LRT-only stops are defined[24]:

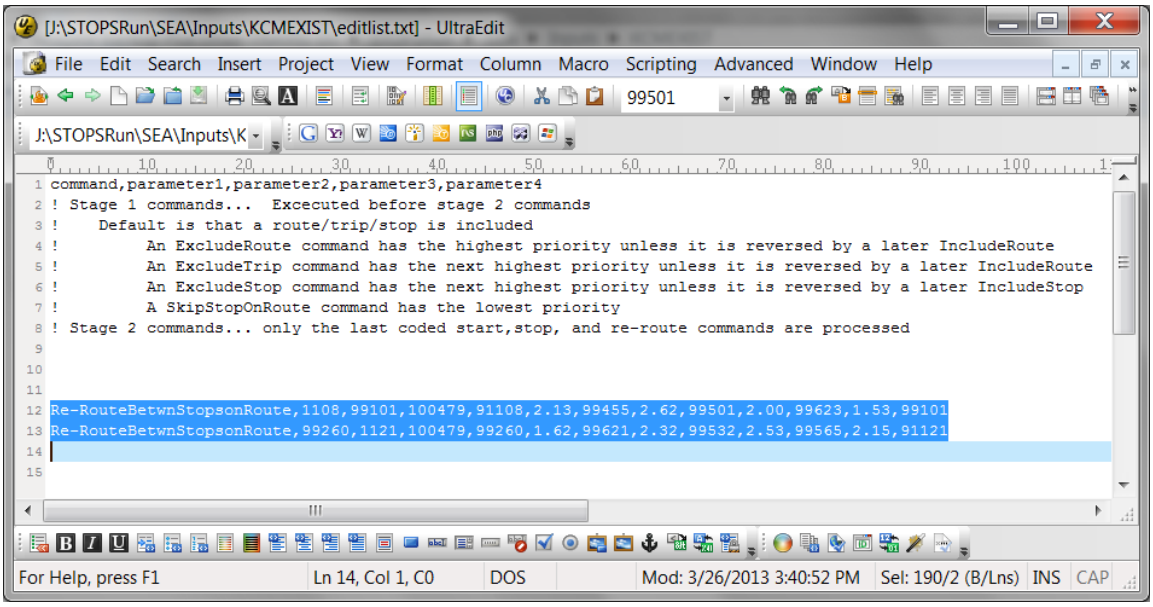
- 91108 and 91121 – Westlake Station
- 99455 and 99565 – University Street
- 99501 and 99532 – Pioneer Square
- 99623 and 99621 – International District

After all separate LRT stop_IDs are defined, editlist can be used to reroute the LRT onto the LRT-specific stop_IDs as shown in Figure 41. In the first non-comment line, the portion of Route 100479 between 1108 (Westlake Station in the original file/to be used for buses only) and 99101 (LRT-only station in original file at Royal Brougham Way) is rerouted to the following sequence of stops and times:

- Start at 91108 (new LRT-only Westlake Station), travel 2.13 minutes to 99455(new LRT-only University Street Station)

[23] These examples are intended to illustrate project coding techniques. They were developed by the STOPS development consultant and are in no way reflective of any planned projects in the Seattle area.
[24] Two nodes are required—one for each direction of travel since the existing bus/LRT tunnel stations are coded separately for each direction.


[J:\STOPSRun\SEA\Inputs\KCMEXIST\stops.txt] - UltraEdit
File Edit Search Insert Project View Format Column Macro Scripting Advanced Window Help
99501
J:\STOPSRun\SEA\Inputs\K
29 "431","","3RD AVE & PIKE ST","","47.6097908","-122.337959","21"
30 "450","","3RD AVE & UNION ST","","47.6082497","-122.336548","21"
31 "455","","UNIVERSITY STREET","","47.6072464","-122.335754","21"
32 "99455","","UNIVERSITY STREET","","47.6072464","-122.335754","21"
33 "456","","UNIVERSITY STREET","","47.6076088","-122.336082","21"
34 "468","","3RD AVE & SENECA ST","","47.6065025","-122.334938","21"
35 "480","","3RD AVE & MARION ST","","47.6049957","-122.333572","21"
36 "482","","COLUMBIA ST & 2ND AVE","","47.6038055","-122.333847","21"
37 "490","","3RD AVE & COLUMBIA ST","","47.6037941","-122.332466","21"
38 "500","","3RD AVE & JAMES ST","","47.6022339","-122.331047","21"
39 "501","","PIONEER SQUARE","","47.6021385","-122.331055","21"
40 "99501","","PIONEER SQUARE","","47.6021385","-122.331055","21"
41 "502","","PIONEER SQUARE","","47.6026077","-122.331497","21"
42 "515","","3RD AVE S & S MAIN ST","","47.6002388","-122.330376","21"
43 "531","","3RD AVE & JAMES ST","","47.6026421","-122.331184","21"
Ln 40, Col 1, C0
UNIX
Mod: 3/26/2013 11:50:38 AM
File Size: 615653
INS
CAP


[J:\STOPSRun\SEA\Inputs\KCMEXIST\editlist.txt] - UltraEdit
File Edit Search Insert Project View Format Column Macro Scripting Advanced Window Help
99501
J:\STOPSRun\SEA\Inputs\K
1 command,parameter1,parameter2,parameter3,parameter4
2 ! Stage 1 commands... Excecuted before stage 2 commands
3 ! Default is that a route/trip/stop is included
4 ! An ExcludeRoute command has the highest priority unless it is reversed by a later IncludeRoute
5 ! An ExcludeTrip command has the next highest priority unless it is reversed by a later IncludeRoute
6 ! An ExcludeStop command has the next highest priority unless it is reversed by a later IncludeStop
7 ! A SkipStopOnRoute command has the lowest priority
8 ! Stage 2 commands... only the last coded start,stop, and re-route commands are processed
12 Re-RouteBetwnStopsonRoute,1108,99101,100479,91108,2.13,99455,2.62,99501,2.00,99623,1.53,99101
13 Re-RouteBetwnStopsonRoute,99260,1121,100479,99260,1.62,99621,2.32,99532,2.53,99565,2.15,91121
For Help, press F1
Ln 14, Col 1, C0
DOS
Mod: 3/26/2013 3:40:52 PM
Sel: 190/2 (B/Lns)
INS
CAP

2. Investigate the files (see Figure 42).

    a. Route_ids are generally 6 characters and trip_ids have 8 characters. This means that no column definition is required

    b. The route file shows that the SLU Streetcar is coded as route_id "100340" with a short name of "98".

    c. The trip file shows that most weekday trips on route_id 100340 have a trip_id between "19032246" and "19032387".

    d. The stop_time file shows that the first northbound trip begins at stop_id 26680

    e. The stop file files show that stop_id 26680 is Westlake Avenue and Olive Way.

    f. Investigation of additional routes using the schedule_viewer shows that Northbound trips all begin at Stop 26680 while south-bound trips terminate at Stop 1630. This is determined by clicking on each route pattern for route 98 in the left hand box, and then clicking on the Westlake Station to see the node number. This is shown in Figure 43. This process can also be used to show that northbound trips beginning at 26680 next travel to 26689. Southbound trips that end at 1630 all come from 1619.

3. The Central Link Westlake Station is 2 blocks south at Pine and 4th Avenue where the illustrative new streetcar station would also be located (See Figure 44).

4. Edit stops.txt to add the new Westlake Transfer station at (47.611762,-122.336562). Search the King County Metro and Sound Transit Database to confirm that 26681 is not used and define a new streetcar stop with this stop_id (See Figure 45).

5. Start with the existing editlist file to keep the edits previously entered. Add a re-route command to extend all southbound trips from 1630 to 26681. Add another command to begin all northbound trips at 26681 before traveling to 26680. This is done by identifying links to re-route (links are used instead of nodes so that directionality can be taken into consideration). Figure 46 shows the completed editlist. As shown in this figure, one editlist command is created for each direction. Each line uses two stop_ids to identify a link to be modified in terms of the first stop and last stop in the section that is to be changes. A replacement string shows how these two stops become three stops after the re-route. For the southbound service, the new routing begins at 1619, travels to 1630 in 0.88 minutes (same as the original file), and then continues to 26681 in 1.5 minutes. In the reverse direction, the new extension will begin at 26681, travel to 26680 in 1.5 minutes and continue to 26689 in 1.17 minutes where it resumes the originally scheduled run.

Make sure that the new station is also coded in the station file ("2. Specify Station Locations" from the STOPS Main Menu) and that it references the stop_id (26681). When this is done, the no-build alternative is ready for processing.

This is all that needs to be coded since there is no need to add any routes or trips. (See the description of the build scenario coding for an example of these steps). Section 4.8.7.5 discusses the steps that can be used to confirm the accuracy of GTFS coding for each alternative.

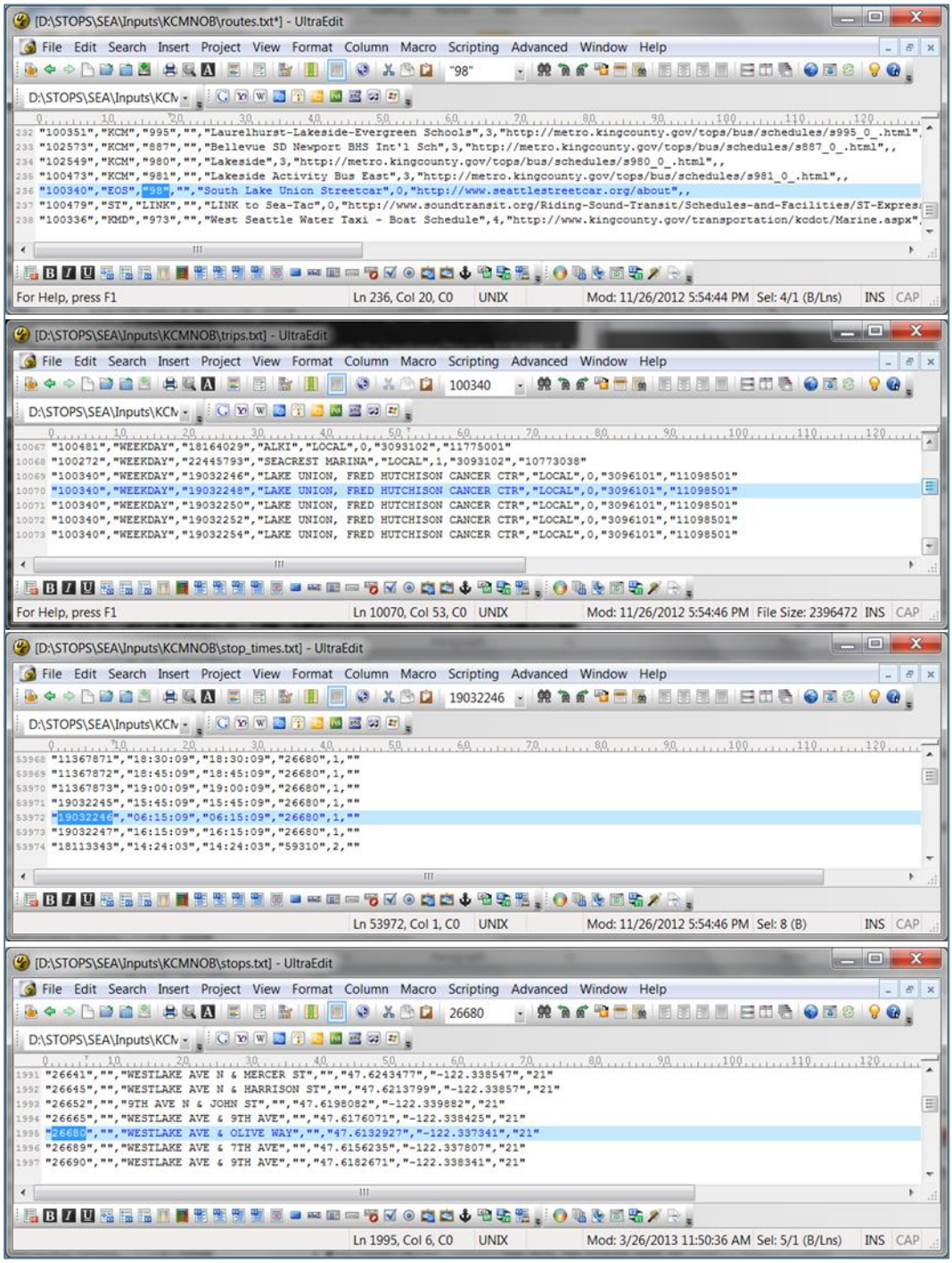


Figure 42. GTFS File Investigation

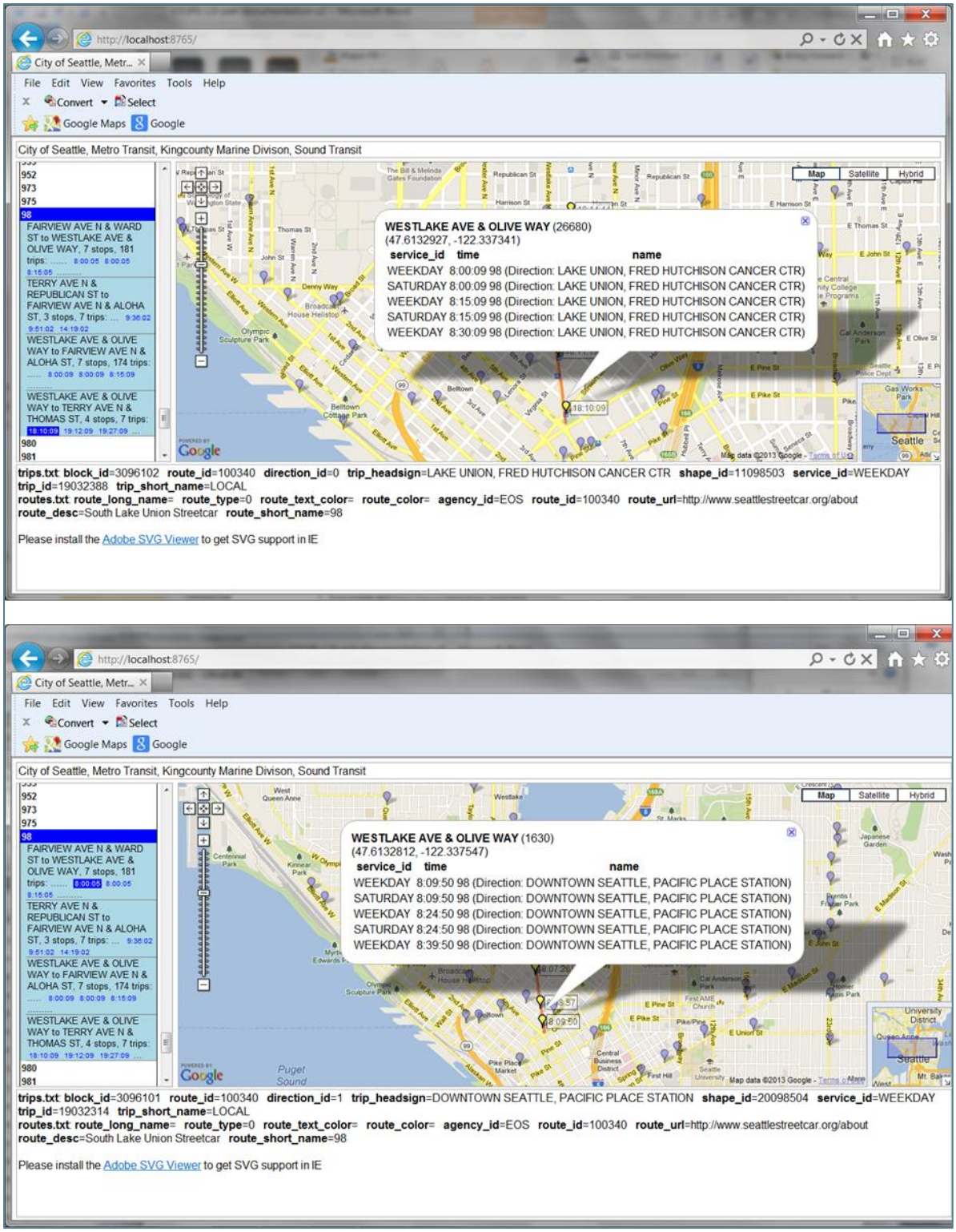


Figure 43. Westlake Terminus of SLU Streetcar

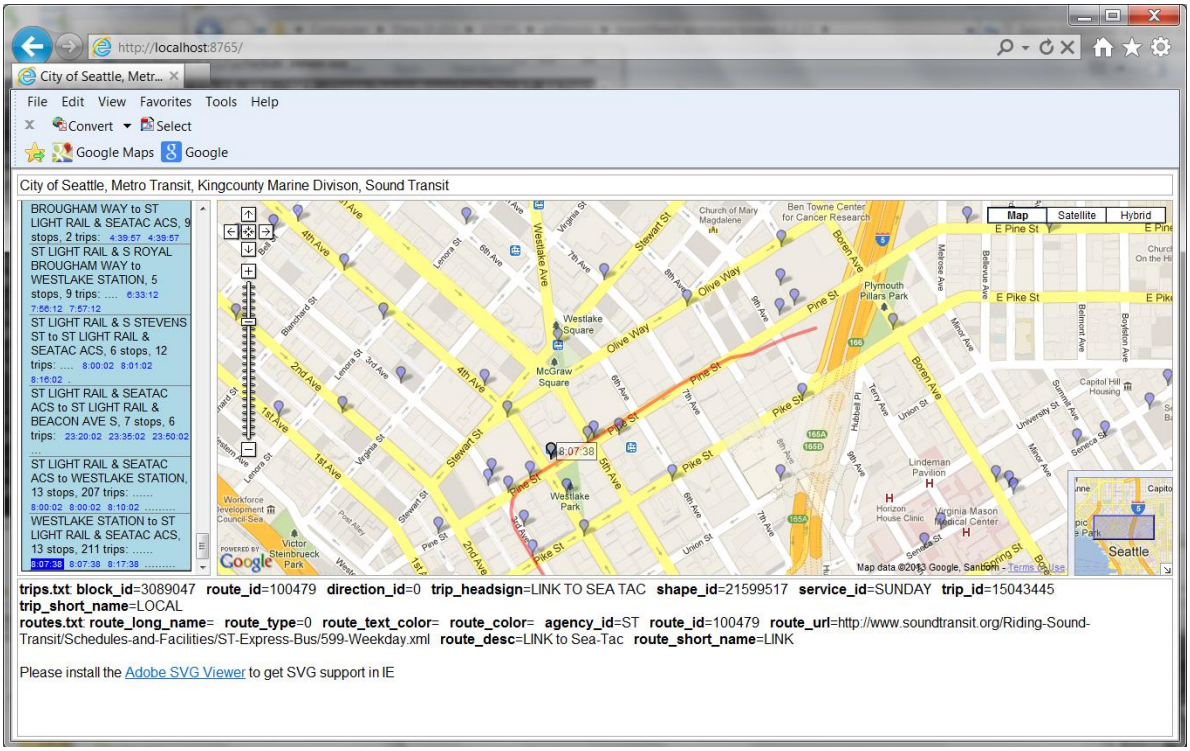


Figure 44 Westlake Terminus of Central Link LRT

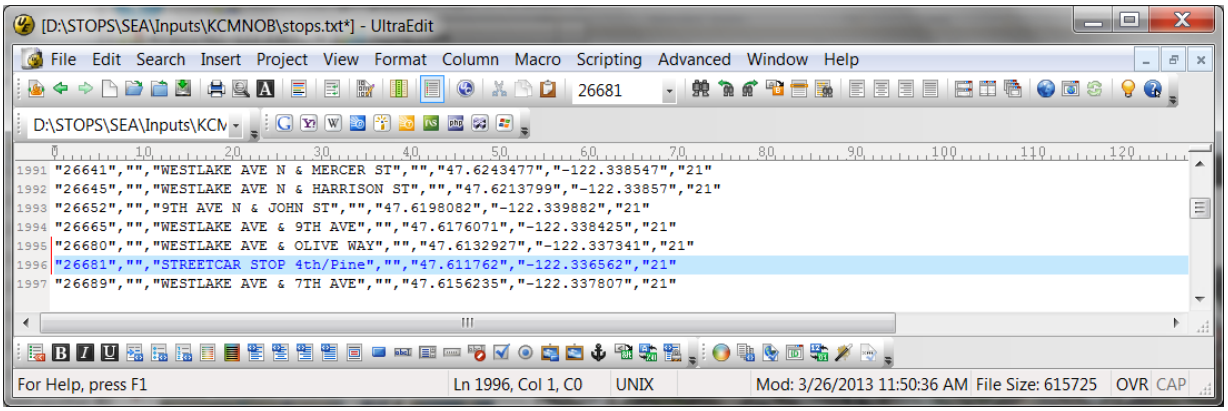


Figure 45. New Stop Added to Stop File

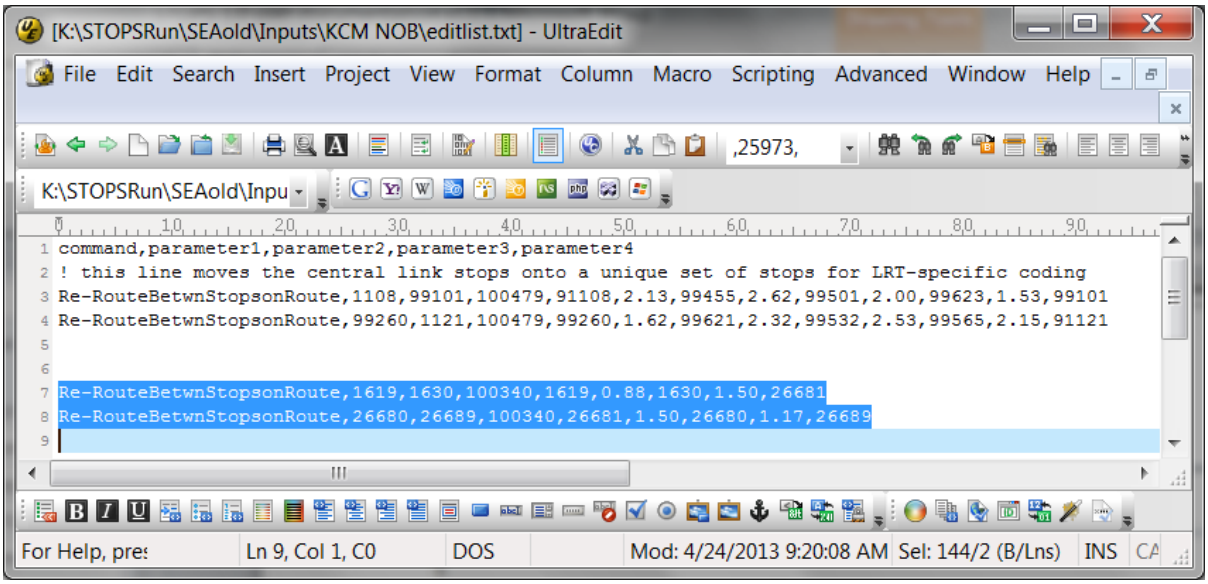


Figure 46. Re-route existing Streetcar to Extend Service to New Station

4.8.7.4 Build Alternative Coding

In many ways a brand new alternative is easier to code than an extension to an existing line since much less investigation is required into the nature of the existing service. The build example described in Section 4.8.7.1 inserts a brand new rail line with all new stations. It does, however require that routes on 3rd Avenue be diverted to 5th & Madison. The other route direction operates on 4th Avenue, is only a block away from the streetcar line, and will not be diverted as part of this illustrative scenario.

1. Copy the "KCMNOB\" directory to the "KCMBLD\" directory. This will result in the build directory containing all of the improvements already made to the no-build scenario.

2. Continue the investigation of routes to identify what re-routing is required. As shown in Figure 47, when no route is selected and the user clicks on a stop, the schedule_viewer will display all routes serving that stop. Clicking on the stops on 3rd Avenue, reveals the fact that Routes 26 and 358 travel between stop_id 468 at 3rd Avenue and Seneca Street then to stop 490 at 3rd Avenue and Columbia. For this example, we will assume that the bus deviates to stop 1400 at Madison Street and 5th Avenue. In a real alternative, more research would be conducted to find a list of all buses that should be re-rerouted and separately consider trips in either direction.

3. Update the editlist file to add the project re-routes to the editlist file (keeping the NOBL edits, previously entered). This reroute uses a "*" wildcard to indicate that all buses serving stops 468 and 490 (in that order but not necessarily adjacent) regardless of route will be rerouted to stop 1400 with a travel time of 1.2 minutes to 1400 and 1.2 minutes back to the original route. This change is shown in Figure 48.

4. Create three new stop ids for the new streetcar route (26682, 26683, and 26684) and enter them into the stop file. (See Figure 49).

5. Edit the route file to create a new route making sure that the route ID is not duplicated in either this file or the SND\ route.txt file. (See Figure 50).

6. Edit the trip file to create two unique trips for this route (one in each direction), making sure that the trips IDs are not duplicated in this or the SND\ trip files. In this example, this is accomplished by using characters to describe the new routes. These are legal GTFS trip IDs and are case sensitive. (See Figure 51).

7. Edit the stop_time.txt file to create time points for each stop on each trip. (See Figure 52).

8. Edit the frequency.txt file to indicate the frequencies for this route. (Figure 53).

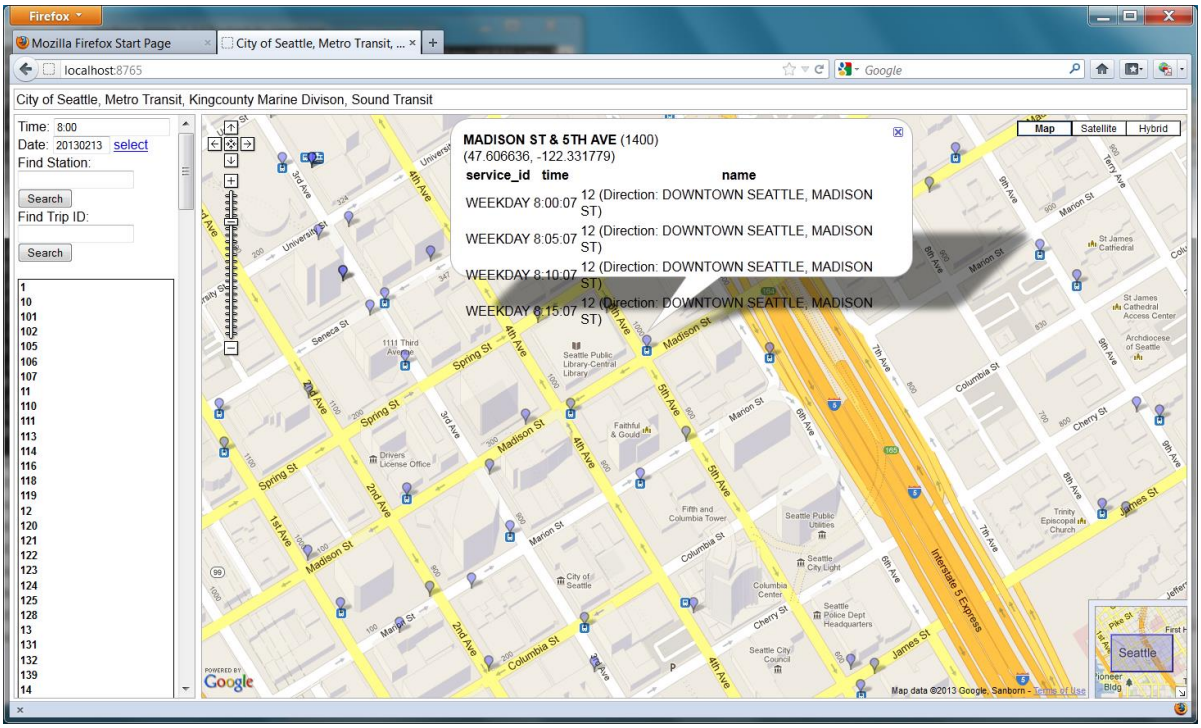


Figure 47. Exploration of Routes Serving Third Avenue Stops

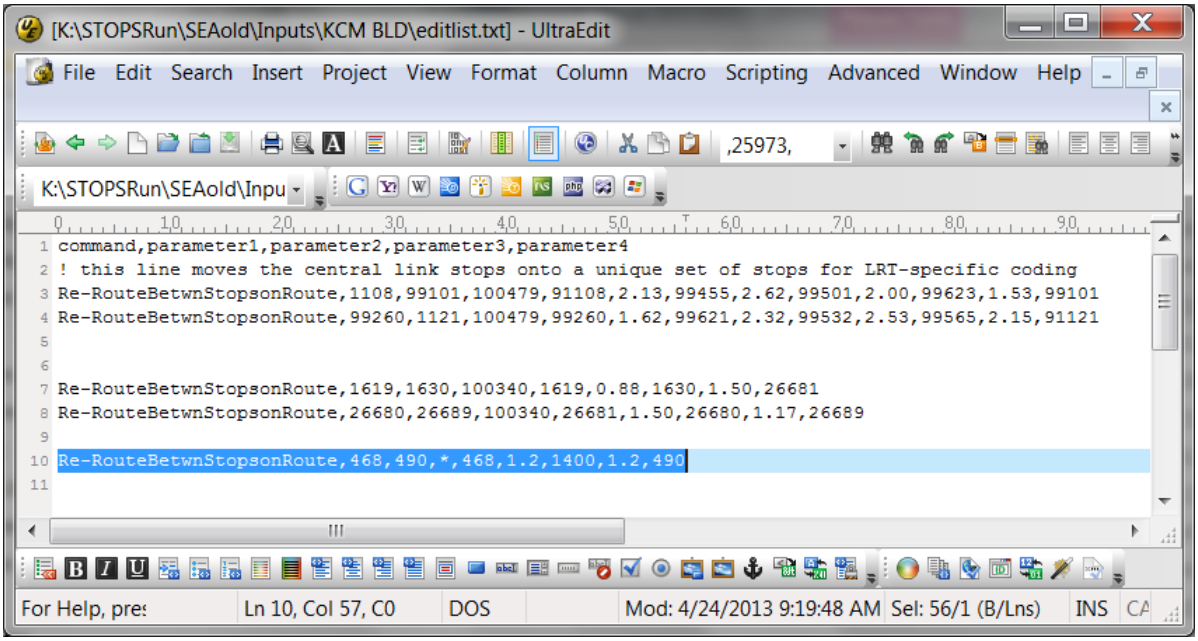


Figure 48. Records Added to Edit List File to Represent Re-Route of 3rd Avenue Routes

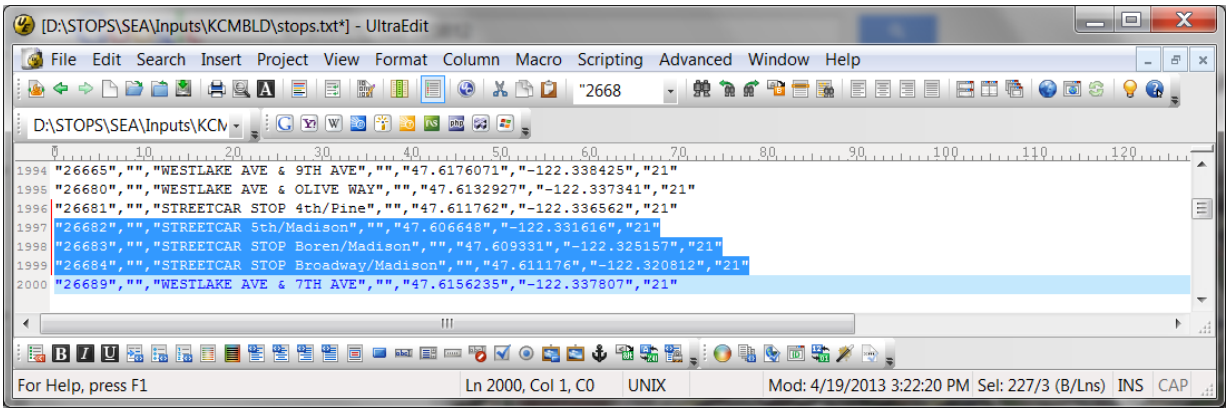


Figure 49. Records Added to Station File to Represent New Streetcar Stations

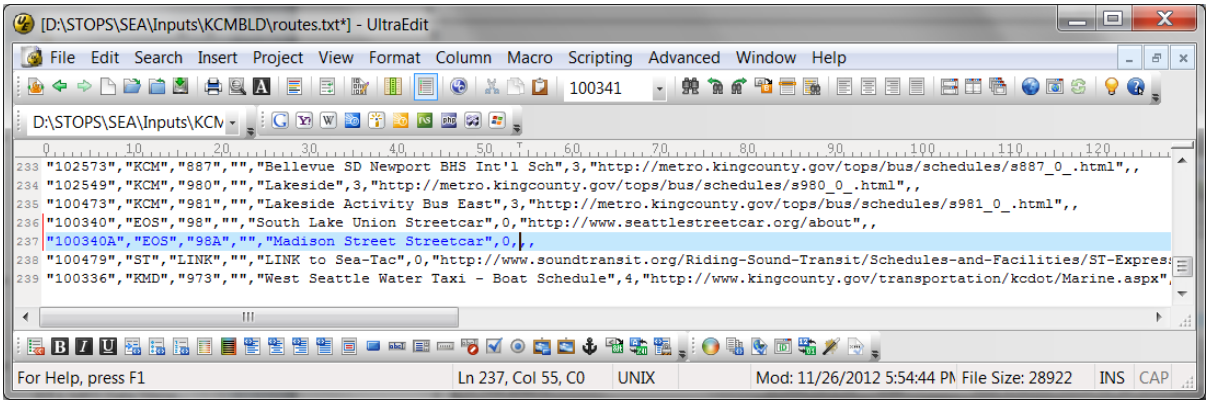


Figure 50. Record Added to Route File to Represent New Streetcar Route

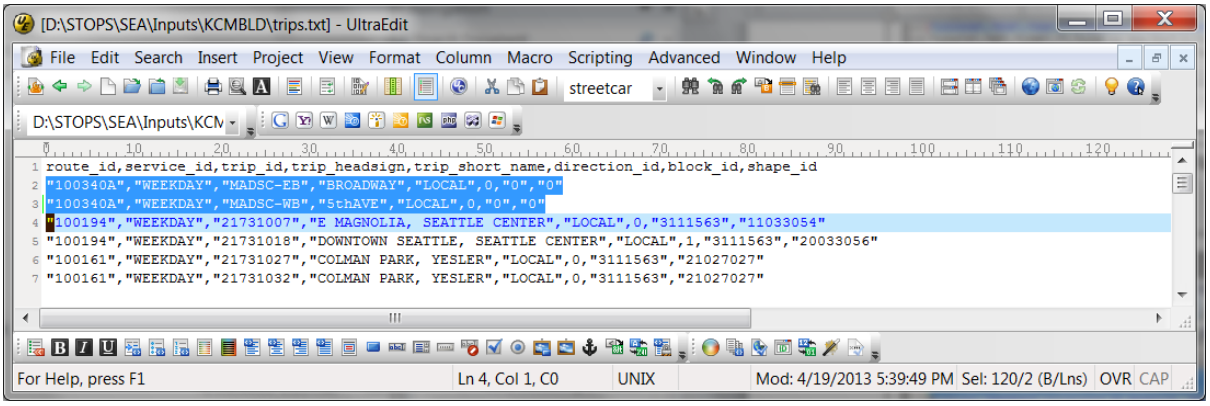


Figure 51. Records Added to Trip File to Represent New Streetcar Trips

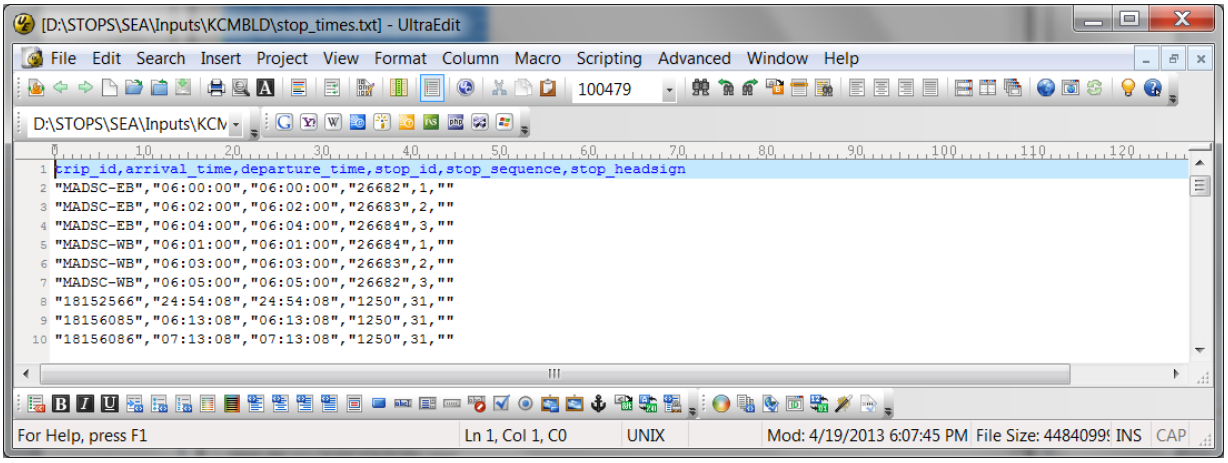


Figure 52. Records added to the Stop_Time file for New Streetcar Trips

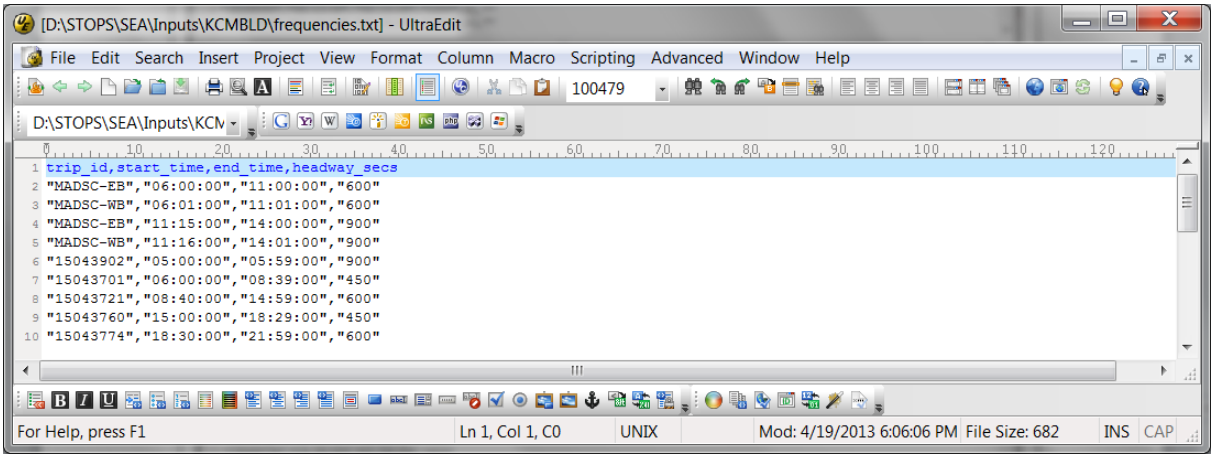


Figure 53. Records Added to Frequency File

4.8.7.5 Confirmation of GTFS Coding

GTFS Coding is complex and it is sometimes difficult to know if the changes are coded correctly without testing the networks for accuracy. This is further complicated by the fact that the schedule_viewer program does not process the editlist or frequency commands.

Optional STOPS commands are available to use GTFPath to read the existing, no-build, and build networks and construct a GTFS file set that converts editlist and frequency commands into a series of peak and off-peak oriented networks that can be mapped with scheduler-viewer. This process is accomplished by clicking on "5a EXST GTFS Test", "5b NOBL GTFS Test", or "5c. PROJ GTFS Test". This step will cause GTFPath to build peak and off-peak networks for the existing, no-build, or build scenarios, respectively. Output networks are generated and placed in subdirectories of the GTFOutput\ directory. Subdirectories are identified according to the time period ("PK" or "OP" for peak and off-peak) and ("EXST", "NOBL", or "BLD-" for each scenario)

The GTFS Test procedures separately test the peak and off-peak networks. After each run, STOPS asks if the user would like to review Fixed Guideway STOP_IDs. If the user clicks "Yes", then STOPS opens notepad and displays a file showing the internal STOP_IDs served by Fixed Guideway lines. Examples of the message box and the sample file from Nashville are shown in Figure 54. The last station in this example shows a station with a long (greater than 9 characters) STOP_ID that was given a shorter alias in place of the long ID. The alias is formatted as nnnnnS# where "nnnnn" is an internally generated numeric ID (1 in this example), the S is the suffix (may be blank and is "A" in this example), and "#" which is a code indicating an alias. The STOP_IDs (or alias if provided) is what is coded in the station file GTFS STOP_IDs.

To view the transit networks:

- Drag the desired subdirectory (e.g., "PK_TR_BLD-" for the peak build scenario) to the schedule_viewer application
- Select on each relevant line to determine whether the GTFS edits were properly implemented. The three key schedule changes to the build network example are displayed in Figure 55, Figure 56, and Figure 57.

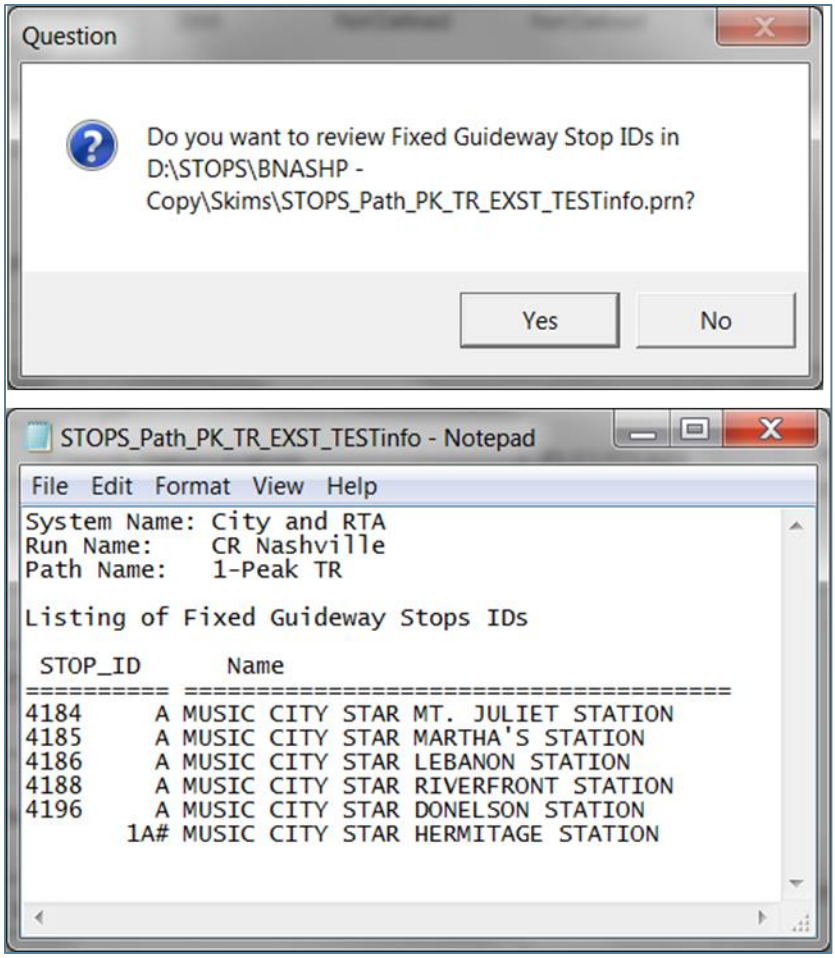


Figure 54. Listing of Fixed Guideway STOP_IDs

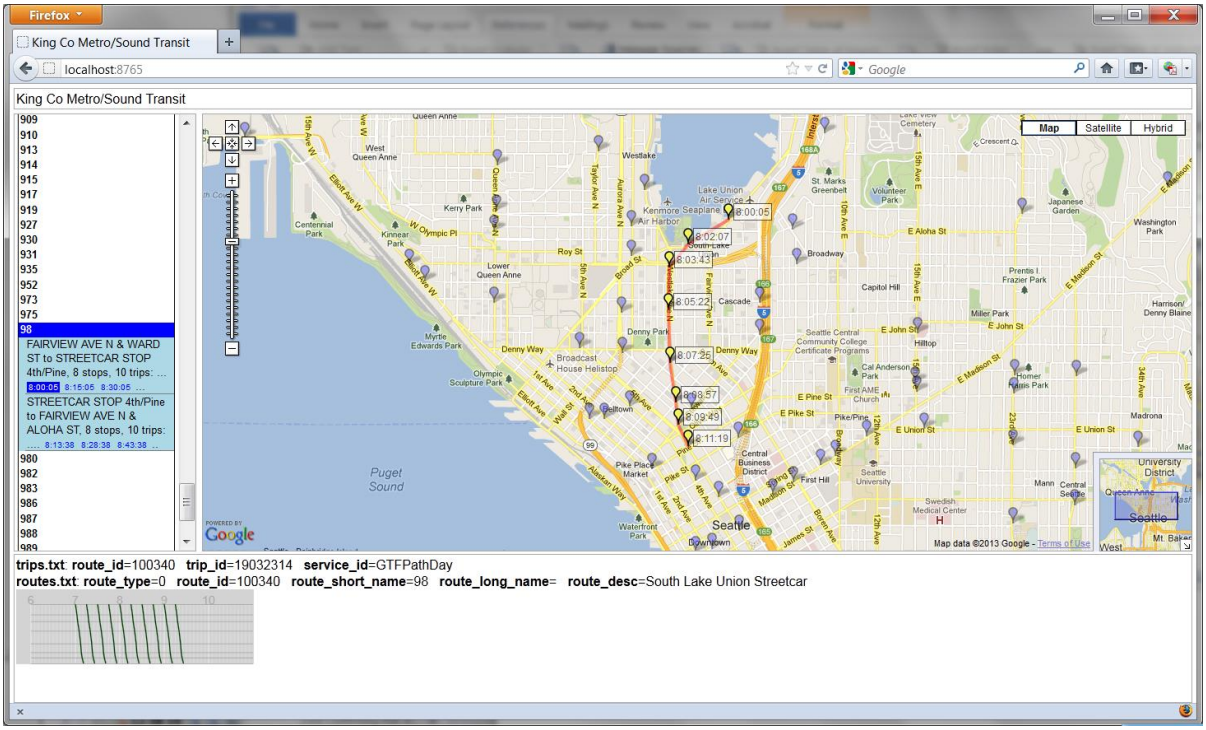


Figure 55. Scheduler Viewer Showing Extension of SLU Streetcar

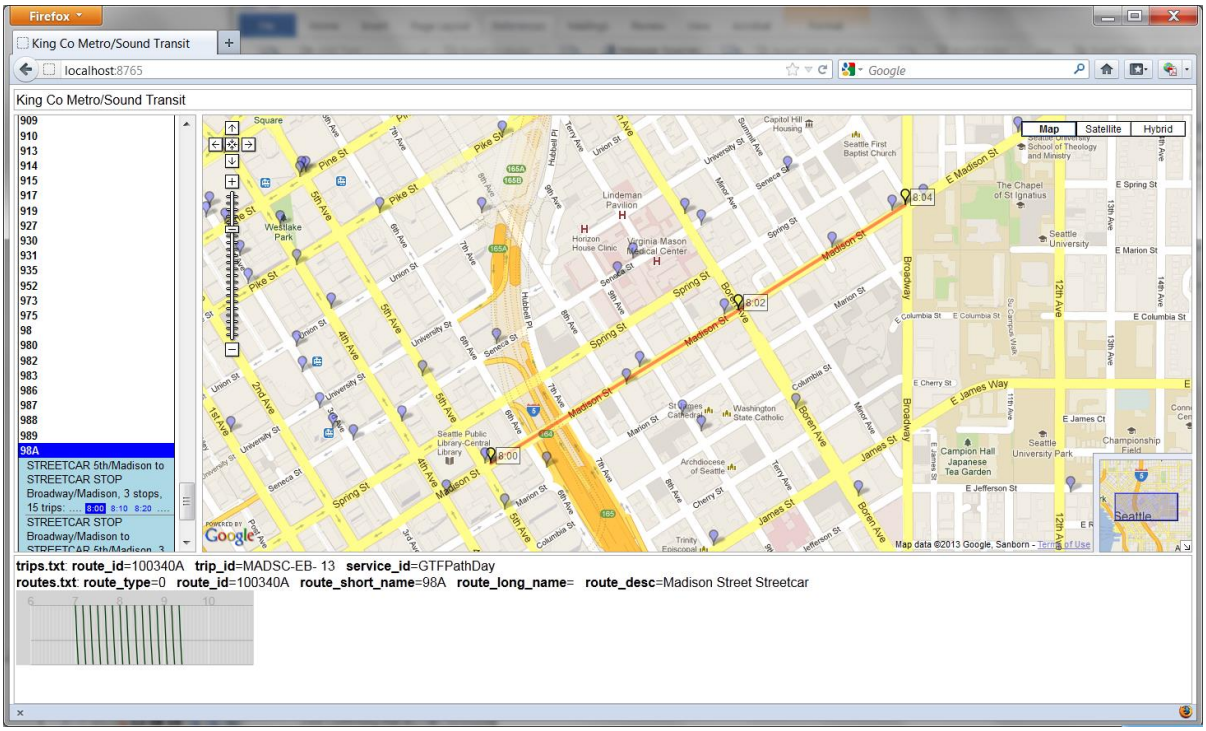


Figure 56. Schedule Viewer After Addition of New Streetcar

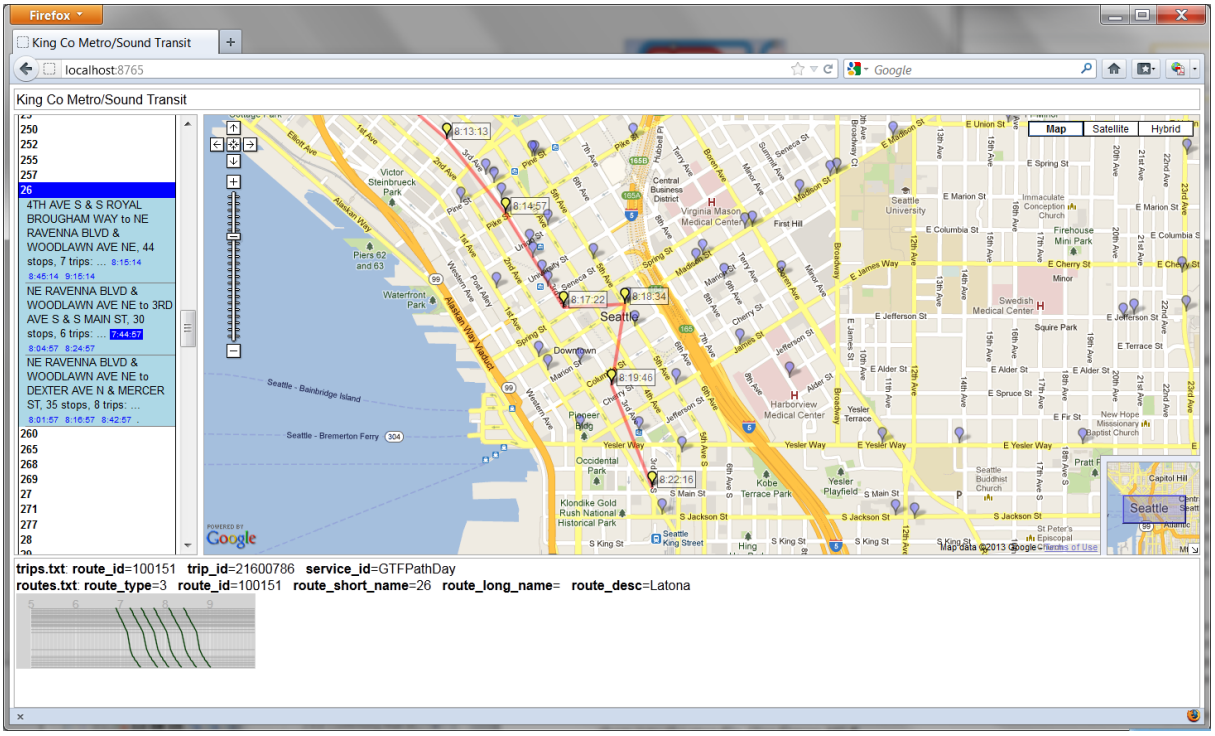


Figure 57. Southbound Route 26 Deviation to 5th/Madison

4.8.8 Confirming that All GTFS Files are Present

When all GTFS Files are present, the status next to "5. List and Check GTFS Files" changes to "FILES FOUND!" as shown in Figure 58. If all files are not present, then click on "5. List and Check GTFS Files" to see which files are missing.

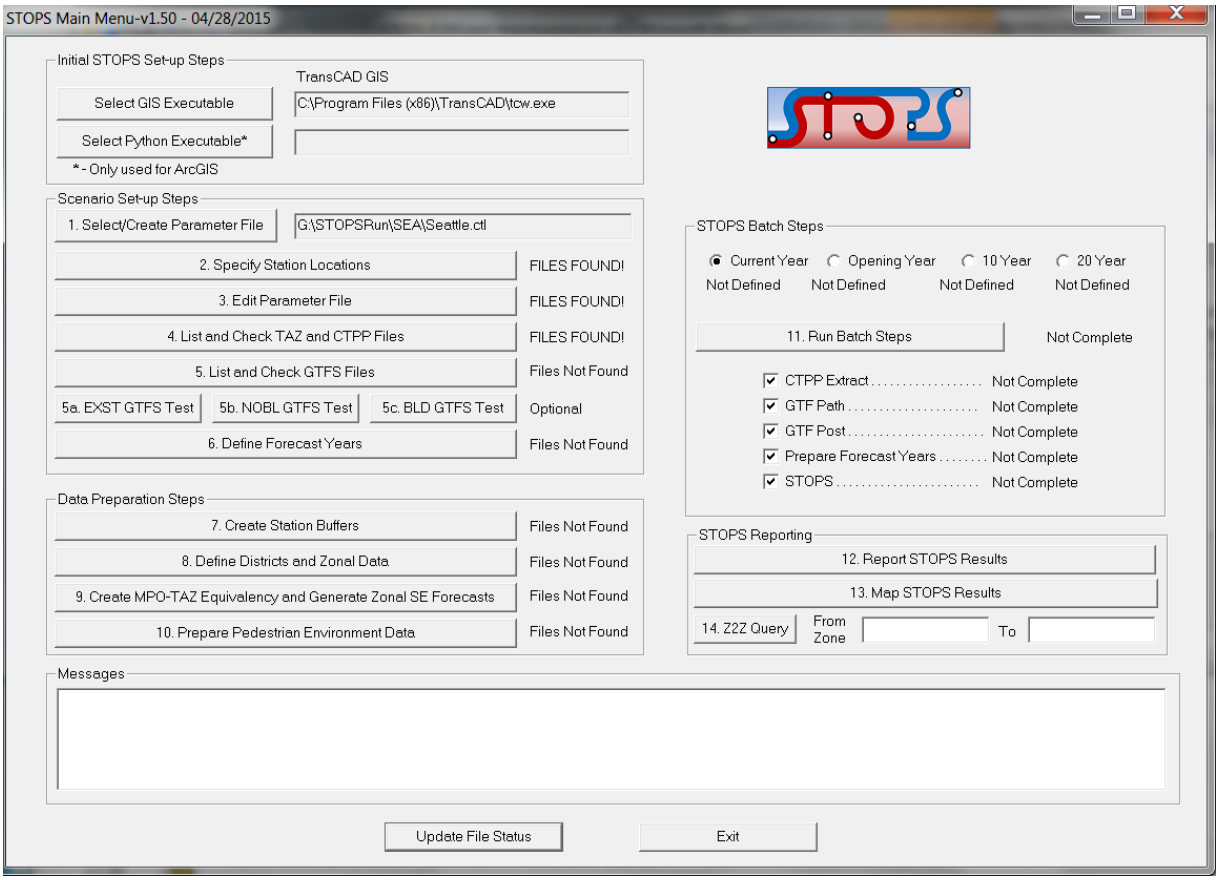


Figure 58. STOPS Main Menu After All GTFS Files are Found

4.8.9 Final Review of Station File

After all of the GTFS Files are updated, make sure that all stations are present in the Station file. If necessary, select "2. Specify Station Locations" to add any stations that were missed earlier as shown in Figure 59. The user should also check the coding of each field, particularly the STOP_ID fields which may have been left blank during earlier edits. The user should run the GTFS Test steps described in Section 4.8.7.5 to confirm that all relevant STOP_IDs are assigned to a station.

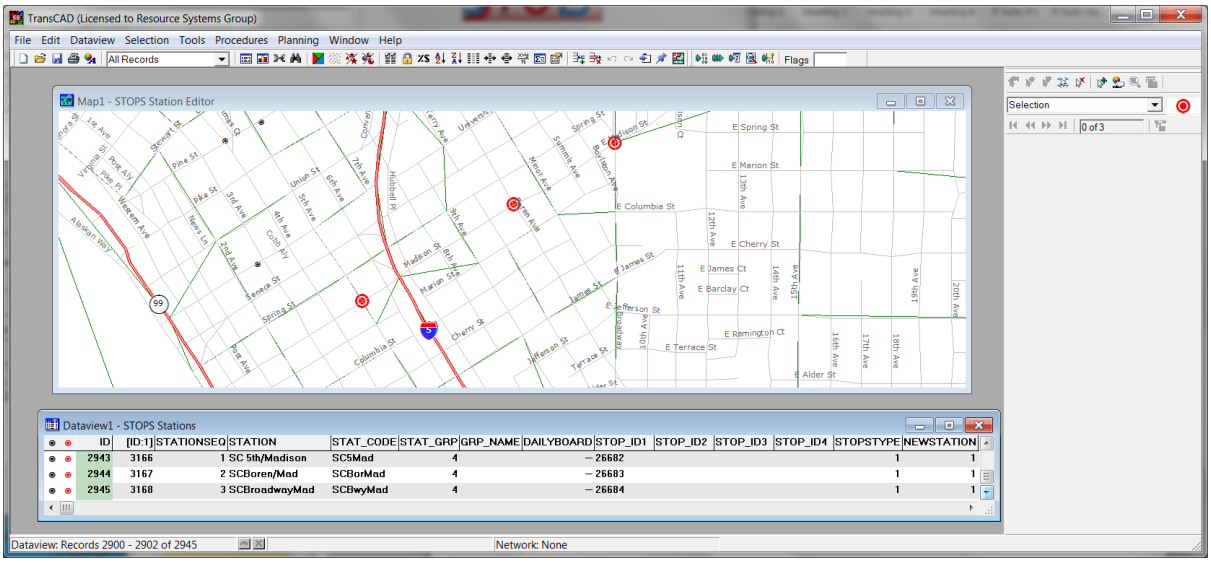


Figure 59. Adding New Stations to Station File

4.9 Define Forecast Years

The next step involves specifying the parameters associated with each of the forecast years that will be used in STOPS. This process begins by clicking "6. Define Forecast Years" on the STOPS Main Menu. The first time that this option is selected, a dialog will appear asking the user if it is OK to create a new file (see Figure 60). Click "Yes" to continue. Next the dialog shown in Figure 61 appears. This dialog defines each of the analysis years, variables in the MPO zone layer file, and other related ridership information. Most items relate to the MPO zone layer file described in Section 4.6.2. Field names are selected from drop down lists containing the available field names in the MPO zone data file. Year fields are character strings that generally contain the year numbers that are used to identify reported data and file names for results. Linked and unlinked trips are numeric fields that are entered by the user and are used by STOPS as part of its self-calibration routine. The following data are entered in this dialog:

- **Numeric TAZ Field Name (required).** The field in the MPO zone layer file containing the MPO TAZ number used to identify origins and destinations in the auto skim file.
- **CTPP Year (2000) Population Field Name (required).** The field in the TAZ layer file containing the MPO estimate of Year 2000 population.
- **CTPP Year (2000) Employment Field Name (required).** The field in the TAZ layer file containing the MPO estimate of Year 2000 employment.
- **Current Year (required).** A character string identifying the current year for the model calibration and application.
- **Current Population Field Name (required).** The field in the TAZ layer file containing the MPO estimate of current year population.

- **Current Employment Field Name (required).** The field in the TAZ layer file containing the MPO estimate of current year employment.

- **Current Year Regional Transit Unlinked Transit Trips (weekday transit boardings, optional).** If this number is entered, then STOPS will self-calibrate to match the number of regional transit boardings. STOPS will adjust the modeled number of unlinked trips traveling within the 25-mile corridor and using the coded GTFS services to match this entry. It is very important that the coded number reflect both the geographic corridor definition and the GTFS systems included in the model run. ***If significant services for one of the agencies included in the GTFS inputs serve areas outside of the 25-mile corridor radius then any trips occurring in whole or in part outside of the corridor should be excluded from the unlinked trip estimate. Likewise, travel on smaller operators that are not represented by the GTFS files should be excluded from the estimate of regional ridership.***

- **Current Year Home-to-Work and Work-to-Home Linked Trips (weekday linked journey-to-work and from-work transit trips, optional).** If a recent transit survey was conducted, it may be possible to generate a more refined estimate of travel—linked transit trips occurring between home and work and work back to home. This definition is equivalent to journey-to-work plus journey-from-work trips—which comprise both traditional home-based work trips and other travel that involves a stop-over on the way to or from work. This entry should also reflect the corridor definition and GTFS file constraints that apply to unlinked trips.

- **Optional Years and Field Names for Opening Year, 10-Year, and 20-Year Forecasts (optional).** STOPS allows definition of up to 3 additional years that represent the project opening year, a medium-term horizon year, and a long term horizon year. These entries are optional.

- **Growth Factor Geography.** This flag indicates whether STOPS will factor trips on a zone-by-zone basis or on a district-by-district basis. Generally zone level factoring is preferred unless the estimates of zone-level population and employment are not consistent between years and should not be used for updating the CTPP. District level factoring will generate much more consistent growth between the zones in the corridor while zone factoring will show greater differences in growth among zones. The decision of which to use depends on the nature of the MPO forecasts. If the MPO estimates of zone-specific growth assumptions are thought to be representative of future plans, then zone factoring should be used. If the zonal variation is thought to represent spurious differences in data sources then district factoring should be used.

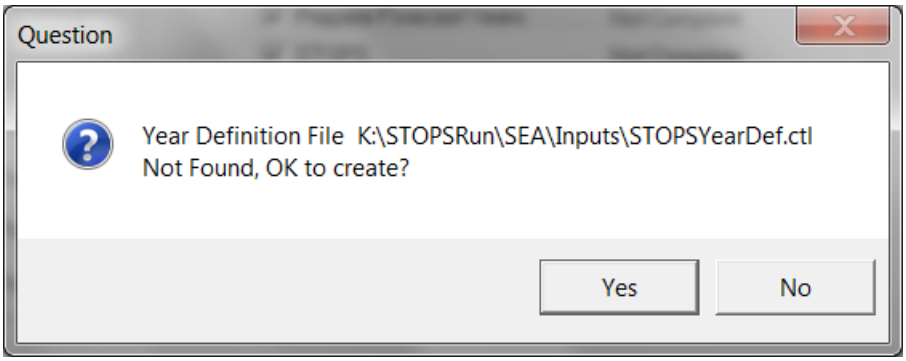


Figure 60. Dialog to Confirm Creation of Year Definition File

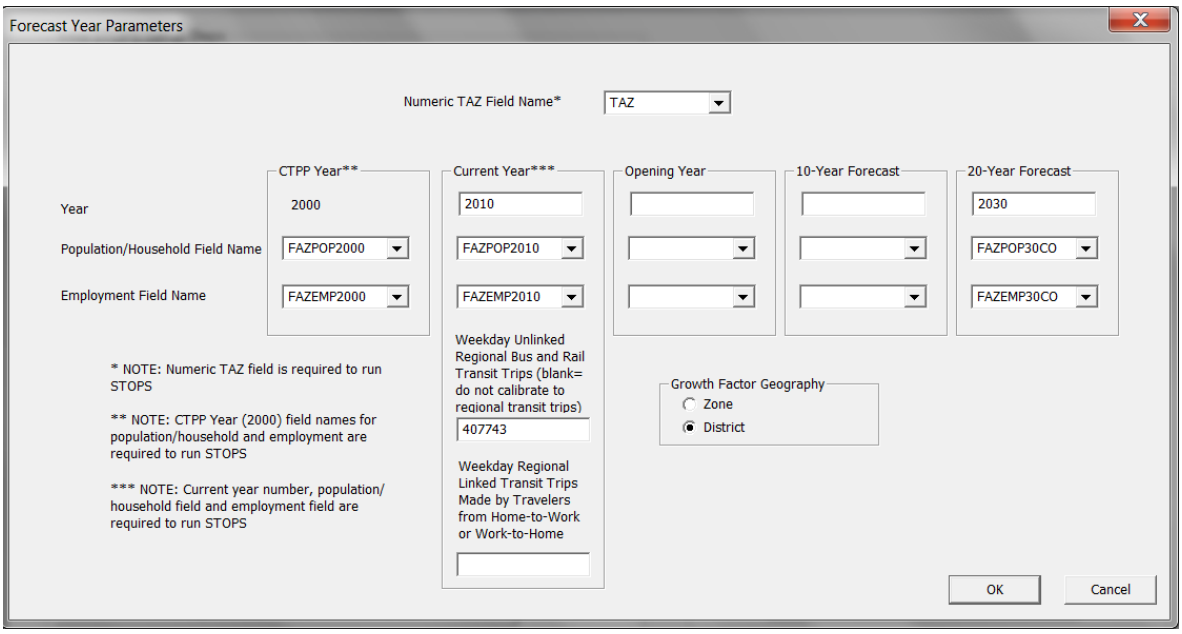


Figure 61. Year Definition Dialog

5. Data Preparation Steps

In the previous chapter, the user defined the STOPS run and prepared input information that will be used to estimate project ridership. If every initial set-up step was successfully completed, then the STOPS Main Menu should show the status as being "FILES FOUND!" through Step 6. (See Figure 62).

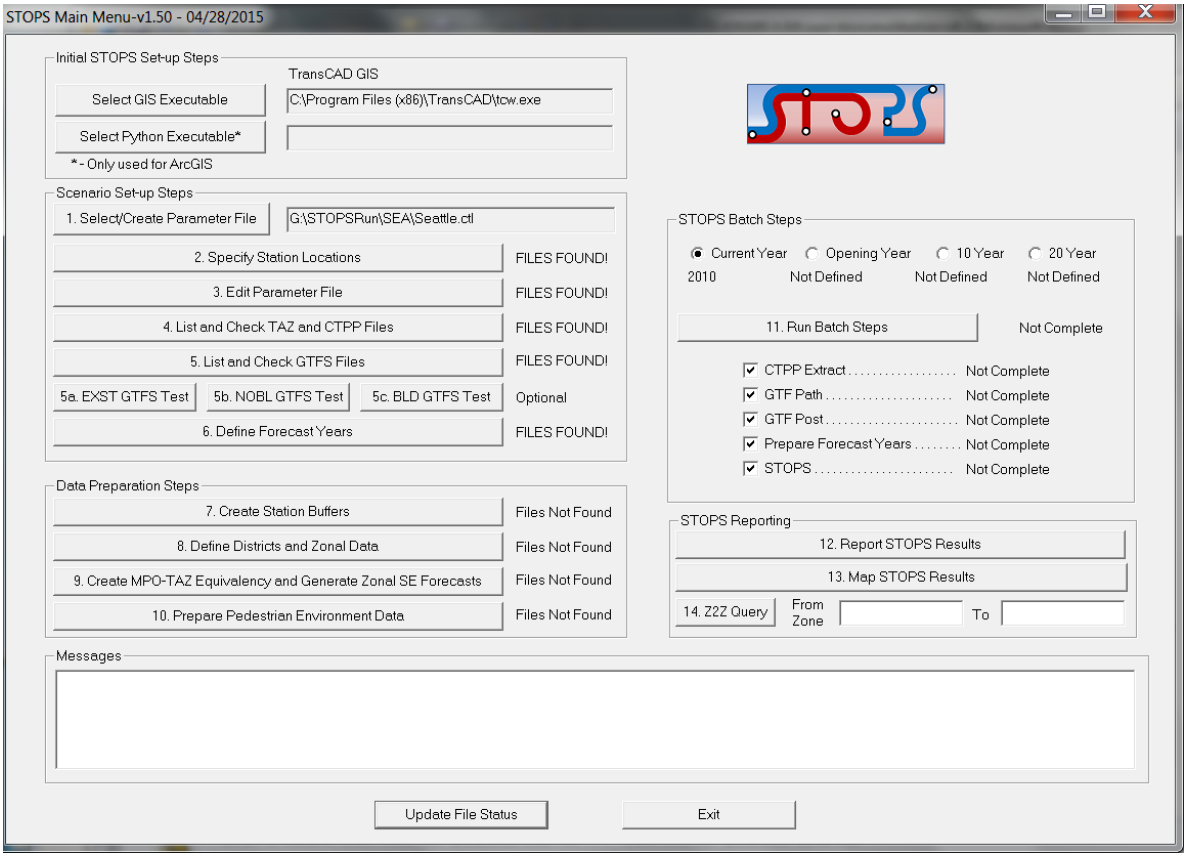


Figure 62. STOPS Main Menu At Beginning of Data Preparation

This chapter describes the next round of STOPS preparation steps, focusing on additional data that is required to generate estimates of Fixed Guideway boardings. Four steps must be accomplished to complete data preparation as described in the following sections.

The steps described in this section are different from the previous section in a very important way. In the previous section, the user is setting up the model run and the steps need not be accomplished sequentially. As the documentation notes, the user may go back and forth between editing stations, specifying parameters, and coding GTFS scenarios until all files are fully defined.

Beginning with this section, STOPS steps are highly sequential. Any change to an earlier step affects many down-stream steps. If it becomes necessary to recode a data item in an earlier step, then all later elements of Data Preparation must be re-run to ensure that all data is properly updated throughout STOPS.

5.1 Create Station Buffers

This step is a completely automated process that builds a series of buffers around the stations that were defined in Section 4.2 and compares them to the CTPP geography (TZ, BG, or TR) file defined in Section 4.5.1. The principal result is a file containing a listing of each CTPP zone (TZ, BG, or TR) to be included in the modeling file and the proximity of each zone to any fixed guideway station and the distance to the nearest PNR station. This program also creates a blank district file in ESRI shape format that is pre-populated with district=99 (i.e., unknown district) or whatever districts were assigned after an earlier run of this program. See Section 5.2 for more information about the process of defining districts.

The step is initiated by clicking on "7. Create Station Buffers". This command will call the program "StatBuffZone" which run for several minutes without any need for user intervention. When done, the program will return to the STOPS Main Menu.

It is possible (including with the Sample data) that you will receive an error message that says:

> "Error: Duplicate zone names found. Split Zones (or duplicate zones form the original census files) must have alternate name specified in LSAD_TRANS field of CTPP Zone File.

A follow-up message will direct you to a file that contains a list of duplicate names.

When this happens, open up your TAZ (or BG or TR) census geography file and code a unique override zone label in the LSAD_TRANS field. (see the discussion on split zones in Section 4.5.3 for a more complete discussion of this process). As long as the value is unique, it can be any 6 character string. When this changes is made, re-run the Create Stations Buffer step. Once all duplicates have been resolved, the error message will not be generated and this step will be labeled with "FILES FOUND!"

5.2 District Definitions and Zonal Data

Districts are groups of one or more zones[25] that are used by STOPS to aggregate travel data to a level suitable for model calibration and reporting. Depending on the type of growth factoring selected by the user, districts also define the unit of geographic analysis used to update the Year 2000 CTPP to represent current and forecast year population and employment. Given this important role inside STOPS, districts must be defined that represent groups of similar stops along the project and other existing fixed guideway lines. Districts should represent areas with levels of walk and drive accessibility to stations that are relatively close to one-another and share similar levels of transit service. A basic district system for the LRT line in Houston, TX is shown in Figure 63.

[25] In this section, the word "zone" will be used to describe any of the geography types (TZ, BG, or TR)

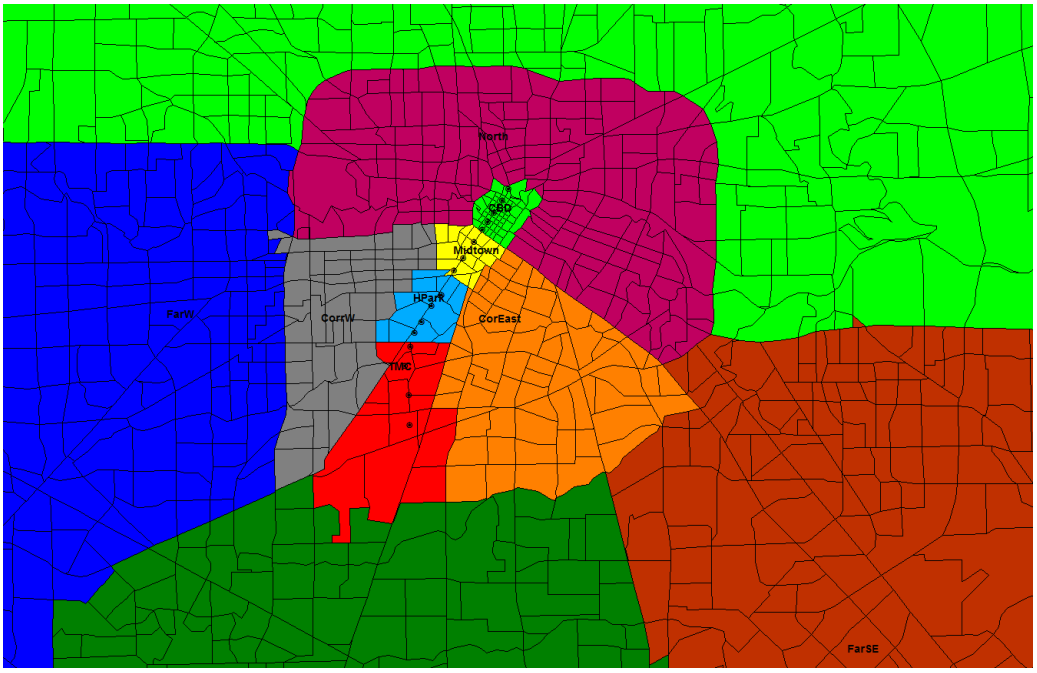


Figure 63. Sample District System for Houston, TX

Districts are defined in an ESRI shape file that contains one contains one record for each zone in the corridor. As noted above, the original file is created in Step 7. Create Station Buffers which creates a "starter" district file with one record for each zone in the modeling area. If a district file had been previously created, then Step 7 copies the district definition to the new file. If this is the first time that Step 7 is run, then it creates a district file with all districts set to "99" (defined as the "Other" district).

After the starter district file is created, the User can update the District file and assign a specific district number and name to each zone. This is done by clicking on "8. Define Districts and Zonal Data". When this button is clicked, STOPS goes directly to TransCAD or ARCGIS and opens the screen shown in Figure 64 (TransCAD implementation).

The map shows the location of each fixed guideway station that had previously been entered in the station file and a thematic map showing each zone and the district number assigned to that zone. The user can update the following data to be representative of the intended district system:

- **ST-CO-TAZ – the full name of the TAZ (or block group or tract).** This field is the full name of each zone as is prepopulated in the data file and should not be changed.
- **DISTRICT – District number (required and entered for every zone).** This 2-digit integer is used to identify the geographic district used for data summarization and mapping. Typical districts might include the CBD and a system of wedge-shaped districts that relate to key transportation corridors radiating outward from the CBD. The wedges may also be segmented by the characteristics of the area (e.g., urban, suburban, and exurban). Generally the reports are most readable if 10 to 15 districts are defined.

- **DIST_NAME - Description (required but entered once for each district—most zones left blank).** A description field is provided for every zone but the user should name each district just once. The zone that is selected for the description will be used later in STOPS to define a representative location for mapping travel times to the district. The description,

itself, is used to label district-to-district tables If multiple labels exist for a district, then STOPS uses the description from the highest numbered row in the data file as the description. In Figure 65 zone "53033 136" is identified as the representative zone for District 1, the CBD. This field can be up to 18 characters wide. The first 5 characters are used as headings in district-to-district matrices so it is important that the first 5 characters be recognizable as a label for the district. This can be accomplished by using an abbreviation and a more complete description (e.g., "CBD Cent Bus Dist", "OTHRE Other East", "OTHRW Other West")

- **CLONE_TAZ - CloneTAZ (optional and only coded in cases where a zone completely changes its character).** When forecasting CTPP JTW into the future, STOPS grows demand according the relative size of Year 2000 and forecast year population and employment. In areas with moderate growth, this is sufficient to generate a reasonable estimate of future travel. Some areas, however, are likely to change their character dramatically (e.g., from farm land to suburban activity center). ***The clone zone allows the user to indicate that a given zone represented by the row in the database should be treated as though it has the population, employment, and CTPP flows of one or more nearby zones that are a "clone" of what is expected to occur.***

  Example: assume that zone "08012 1201" "the borrower zone" had an employment of 10 in 2000 but is expected to have 2,000 employees in 2010. Also assume that zones "08012 1202" and "08012 1203" (the "clone" zones) are nearby and together had a Year 2000 employment of 10,000. In that case, the user might code record "08012 1201" so that it borrows the characteristics of clone zones "08012 1202" and "08012 1203".

  There are two ways to attach a clone zone to a borrower zone.

  - *Case 1 – A borrower zone uses just a single clone. In this case, find the record in the district file for the borrower zone (field "ST-CO-TAZ" contains the borrower zone) and code the clone zone in the CLONE_TAZ field. If the user wants zone "08012 1206" to borrow trips from clone zone "08012 1207", then go to the record in which ST-CO-TAZ is equal to "08012 1206" and code the data as follows:*

ST-CO-TAZ	CLONE_TAZ
08012 1206	08012 1207

  - *Case 2 – A borrower zone uses the CTPP records for a group of zones. In this case, the CLONE_TAZ file is used to define a series of group labels that identifies the clone group that a zone might contribute to and also the clone group that the zone borrows from. This is done by coding two groups "(group to contribute to" and "group to borrow from" separated by a comma) in CLONE_TAZ. Any combination is possible:*
    - *Zone contributes to a group and borrows from that group (or any other group) – both groups are specified, separated by a comma.*
    - *Zone contributes to a group but does not borrow from a group – a group is specified before the comma but nothing appears after the comma.*
    - *Zone borrows from a group but does not contribute – a group is specified after a comma but not before*
    - *Zone is not involved in cloning, the CLONE_TAZ field is blank.*

If zones "08012 1202" and "08012 1203" contribute to "GRPA"[26] and "08012 1201" borrows from GRPA, then the following data would be coded:

ST-CO-TAZ	CLONE_TAZ
08012 1201	,GRPA
08012 1202	GRPA,
08012 1203	GRPA,

Records representing both Case 1 and Case 2 can be mixed in a single file but no one record can be both Case 1 and Case 2.

Hint: Clone zones should be selected that had characteristics in Year 2000 of what the "borrower" zone will have in the forecast years. If the borrower zone has dense employment and no population then the clone zones should be a set of nearby zone(s) that had (have) an employment node in 2000. If the borrower zone will have little employment but significant population in 2035 then the clone zone should be a set of nearby zone(s) with significant population in 2000 but little employment. If the borrower zone has significant levels of population and employment, then the clone group should have had significant levels of population and employment in 2000.

[26] The CLONE_TAZ field is 12 characters wide. Clone group names should be used that are 5 characters or less if a single zone may both contribute to a group and borrow from a group. If that never happens, then group names may be 11 characters wide.

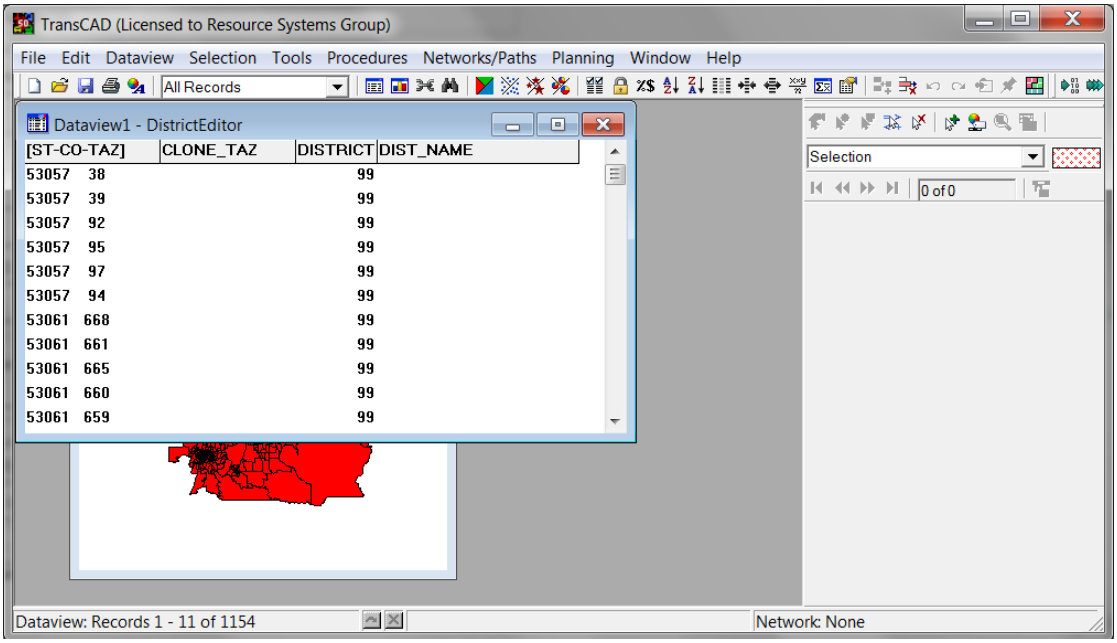


Figure 64. District Definition in TransCAD

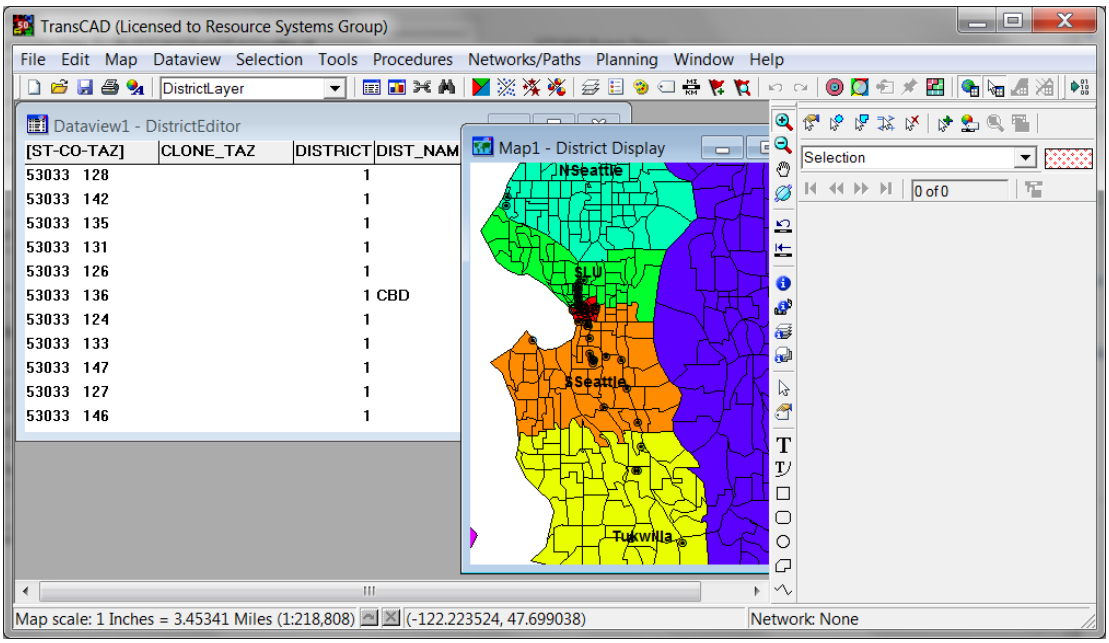


Figure 65. District Map Following District Definition

5.3 Create MPO-TAZ Equivalency and File and Generate Zonal Socioeconomic Forecasts

This is a fully automated step that (1) creates an equivalency file between the CTPP geography and the MPO zone system and (2) generates a file with one record for each unit of CTPP geography containing MPO forecasts of population and employment for each year defined in the forecast year parameter file. It is important that this program be re-run any time the MPO zone file or the forecast year definitions are changed.

This step is initiated by clicking on "9. Create MPO-TAZ Equivalency and Generate Zonal SE Forecasts". This procedure will start a program that will run for several minutes, and return to the STOPS Main Menu. No user actions are required during this process.

5.4 Prepare Pedestrian Environment Data

This is a fully automated step that generates an estimate of the number of Census blocks contained in each unit of CTPP geography. This statistic is used to provide an indication of the completeness of the street grid in a zone which is often indicative of the walkability of an area. This step is initiated by clicking on "10. Prepare Pedestrian Environment Data". This action will start a program that will run for several minutes, and return to the STOPS Main Menu.

6. Run STOPS Batch Steps

After all set-up and data preparation steps are finished, the STOPS Main Menu should indicate "FILES FOUND!" for all steps in the left hand column (see Figure 67). The next step is to run the batch steps. This part of the STOPS process may take between one and twelve hours depending on the speed of the computer, the number of regional zones, and the complexity of the regional transit system.

This step is performed by:

1. Selecting a year to model (any of the previously defined years: Current, Opening Year, 10-Year Forecast or 20-Year Forecast)

2. Clicking on "11. Run Batch Steps"

The user can optionally select which batch steps are run using the check boxes. STOPS defaults to running all of the following steps:

1. CTPP Extract. This step calls the *CTPPExtract* program which reads the CTPP files and prepares an output dataset with one record for each zone-to-zone pair containing the number of CTPP JTW flows. This file also contains space for later posting of zone-to-zone travel times and other data. A separate zone-to-zone file is created for each scenario (existing, no-build, and build). Until travel time data is posted (in GTF Post, below), these three files are identical to one-another.

   Hint: This step should be skipped if CTPP Extract has already been run and nothing in the parameter file or station ESRI shape file has changed. Even if these files have changed then CTPP Extract should not be re-run unless the stations have changed so much that the corridor definition would change or unless the parameter file changed the states in the corridor or type of zone (TZ, BG, or TR). The advantage of not re-running CTPP Extract is that if the GTF Path file can be skipped, the GTF Post step can also be skipped, saving considerably on STOPS execution times. This will frequently occur when the user wishes to re-run STOPS with a different forecast year or if the user wishes to change clone zones or other socioeconomic data.

2. GTF Path. This step calls the *GTFPath* program which reads the GTFS files and generates estimates of zone-to-zone transit travel times. This program is called 18 times—once for each combination of:

   i. Peak (PK) and off-peak (OP) times-of-day
   ii. All transit (TR), fixed guideway transit only (FG), and bus transit only (BS) service type combinations
   iii. Existing (EXST), no-build (NOBL), and build (BLD-) scenarios

> ***Hint: The GTF Path step can be skipped if GTF Path has already been run for the current zone system, the current definition of GTFS subdirectories, and if the contents of the GTFS subdirectories have not been changed since GTF Path was originally run. This could save considerable processing time and is most useful if the user wishes to re-run STOPS with a different forecast year or for a different set of clone zones or SE data.***

3. GTF Post. This step calls *GTFPost* which reads each zone-to-zone JTW flow file and posts the appropriate travel times to each record.

> ***Hint: The GTF Post step can be skipped if GTF Post has already been run for the current set of skims and CTPP Extract tables. Skipping this step will save considerable time. It needs to be re-run only after CTPP Extract is re-run (since that program clears the posting) and any time the GTF Path skims are updated.***

4. Prepare Forecast Years. This step calls the program that reads each zone-to-zone JTW flow file (with posted time estimates) and grows the file to represent the user-selected forecast year.

5. Run STOPS. This step calls *STOPS*, the program that generates estimates of fixed guideway ridership for each scenario for the year specified at the beginning of this phase.

After the User selects the steps to run, STOPS will ask for confirmation that it is OK to run Batch steps. Next, STOPS give the user the opportunity to de-select the current, no-build, or build elements of GTF path, GTF Post, and preparing forecast years. The option to de-select these steps is only active if STOPS detects the presence of the appropriate files generated by an earlier run. It is the responsibility of the User, however, to confirm that these earlier results are still correct for the intended run. The de-select option is provided since in many analyses, the existing and no-build runs are unchanged from earlier runs and skipping these steps can save considerable time. The dialogue that allows the user to de-select elements of certain steps is shown in Figure 66. Dialogue for Running Batch Steps and De-Selecting Scenarios.

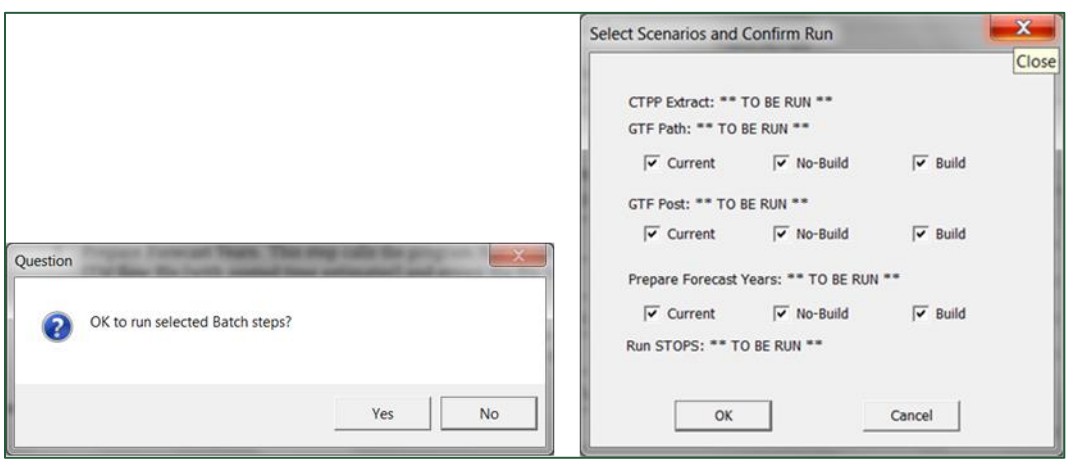


Figure 66. Dialogue for Running Batch Steps and De-Selecting Scenarios

No user action is required during the remainder of the process. A series of similar windows will open that describe the progress of each step. When all steps are done, the program returns to the main menu.

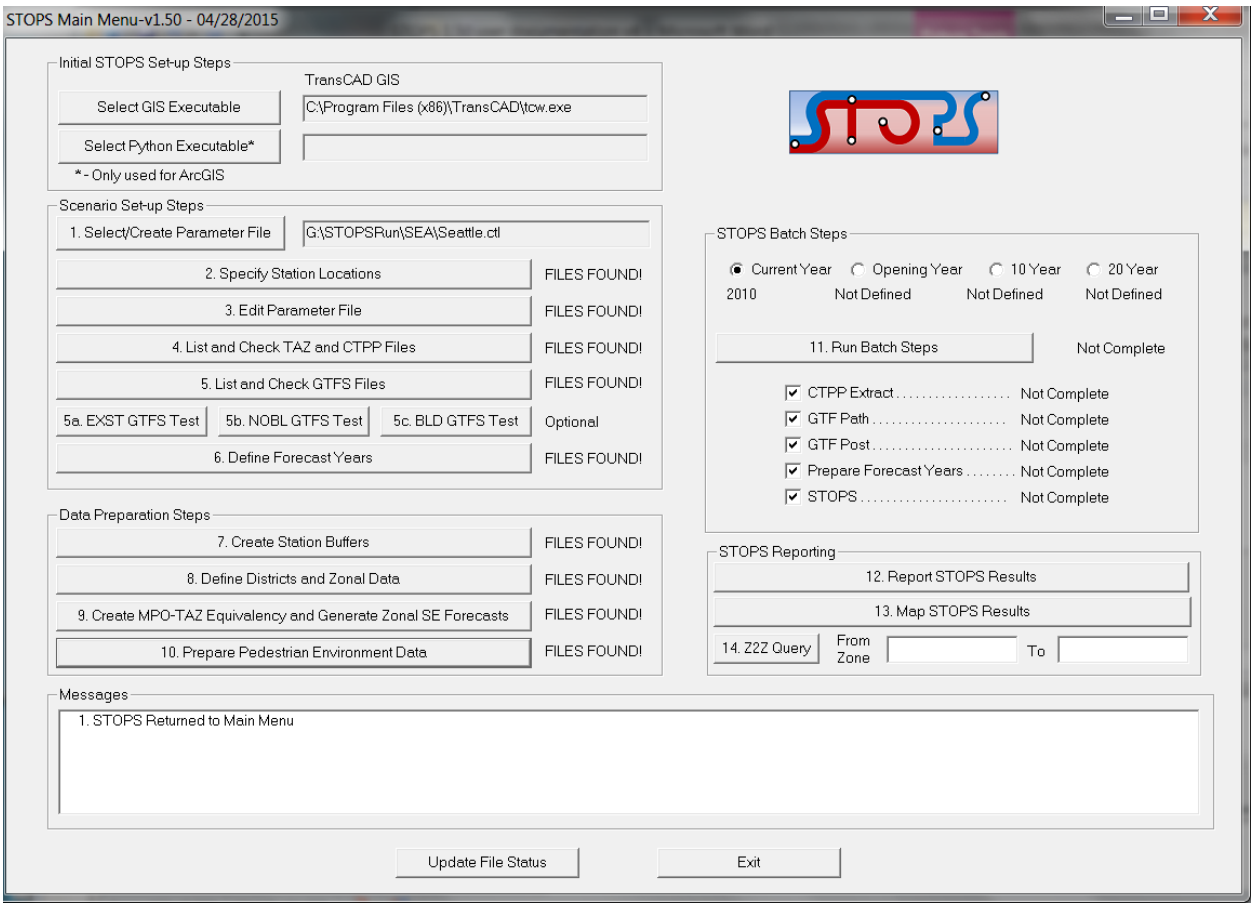


Figure 67. STOPS Main Menu Before Batch Steps

STOPS can be re-run for each of the defined years by selecting each one of the radio buttons (Current, Opening Year, 10 Year and 20 Year) and re-running the batch processes. As suggested in the hints above, after the first run is complete, the user can save considerable processing time by unchecking “CTPP Extract”, “GTFPath”, and GTFPost”. Unless the user changes the GTFS directories or edits the GTFS files, the only steps that differ from year-to-year are the steps associated with “Prepare Forecast Years” and “STOPS”.

7. Reporting Results

When STOPS is finished with the batch processing steps, the STOPS Main Menu will show that all steps are complete as shown in Figure 68. Once this milestone has been achieved, the user can open up a report describing STOPS results and prepare a series of maps that display the characteristics of trips and travel times. This chapter describes both of these steps.

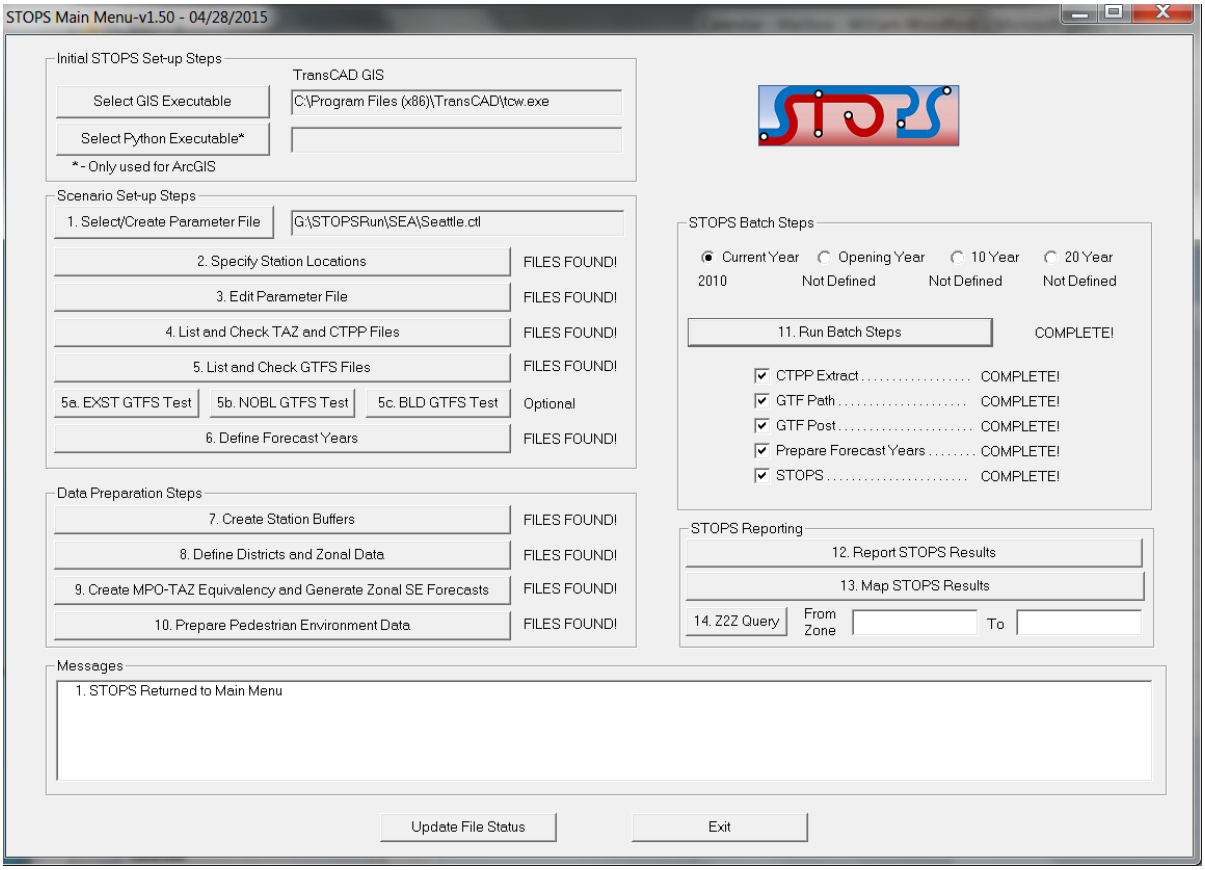


Figure 68. STOPS Main Menu After Completion of Batch Steps

7.1 Report STOPS Results

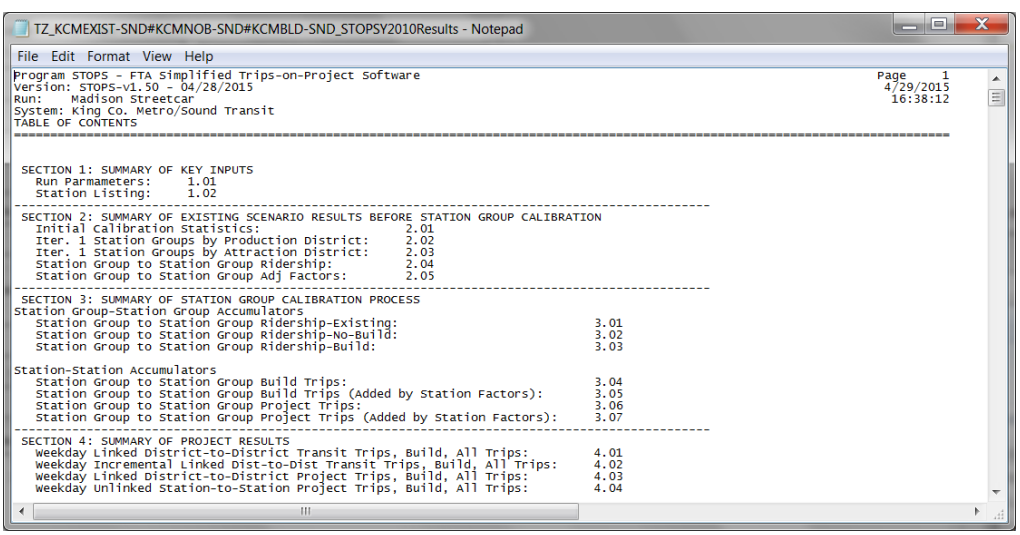
The STOPS results are found in the "reports\" subdirectory in a text file with a name that indicates the nature of the run represented in the report. In the Seattle example, this file is named:

TZ_KCMEXIST-SND#KCMNOB-SND#KCMBLD-SND_STOPSY2010Results.PRN

This filename has the following components:

- Whether the analysis was conducted at the TAZ, Block Group, or Tract Level ("TZ", "BG", "TR"). *"TZ" in the Seattle example.*
- Underscore ("_") as a separator
- The GTFS subdirectory name (or names separated by a hyphen) that make up the Existing Scenario. *KCMEXIST-SND (to represent that this scenario includes both the KCMEXIST and SND GTFS subdirectories).*
- "#" as a separator
- The GTFS subdirectory name (or names separated by a hyphen) that make up the No-Build Scenario. *KCMNOB-SND.*
- "#" as a separator
- The GTFS subdirectory name(or names separated by a hyphen) that make up the Build Scenario. *KCMBLD-SND*
- Underscore "_" as a separator
- "STOPS"
- The Analysis Year. *Y2010.*
- Results.prn"

The report can be opened by clicking on "12. Report STOPS Results". STOPS will open up a notepad window and display the report for the selected year. The beginning of this report is shown in Figure 69.


TZ_KCMEXIST-SND#KCMNOB-SND#KCMBLD-SND_STOPSY2010Results - Notepad

File Edit Format View Help

```
Program STOPS - FTA Simplified Trips-on-Project Software                                   Page     1
Version: STOPS-v1.50 - 04/28/2015                                                           4/29/2015
Run:    Madison Streetcar                                                                    16:38:12
System: King Co. Metro/Sound Transit
TABLE OF CONTENTS
==================================================================================================


 SECTION 1: SUMMARY OF KEY INPUTS
   Run Parmameters:     1.01
   Station Listing:     1.02
-------------------------------------------------------------------------------------------
 SECTION 2: SUMMARY OF EXISTING SCENARIO RESULTS BEFORE STATION GROUP CALIBRATION
   Initial Calibration Statistics:                  2.01
   Iter. 1 Station Groups by Production District:   2.02
   Iter. 1 Station Groups by Attraction District:   2.03
   Station Group to Station Group Ridership:        2.04
   Station Group to Station Group Adj Factors:      2.05
-------------------------------------------------------------------------------------------
 SECTION 3: SUMMARY OF STATION GROUP CALIBRATION PROCESS
Station Group-Station Group Accumulators
   Station Group to Station Group Ridership-Existing:                        3.01
   Station Group to Station Group Ridership-No-Build:                        3.02
   Station Group to Station Group Ridership-Build:                           3.03

Station-Station Accumulators
   Station Group to Station Group Build Trips:                               3.04
   Station Group to Station Group Build Trips (Added by Station Factors):    3.05
   Station Group to Station Group Project Trips:                             3.06
   Station Group to Station Group Project Trips (Added by Station Factors):  3.07
-------------------------------------------------------------------------------------------
 SECTION 4: SUMMARY OF PROJECT RESULTS
   Weekday Linked District-to-District Transit Trips, Build, All Trips:      4.01
   Weekday Incremental Linked Dist-to-Dist Transit Trips, Build, All Trips:  4.02
   Weekday Linked District-to-District Project Trips, Build, All Trips:      4.03
   Weekday Unlinked Station-to-Station Project Trips, Build, All Trips:      4.04
```

Figure 69. Example Report File

The report file begins with a table of contents describing the 15 sections of the report and the tables that are provided in each section. Each report section is described below.

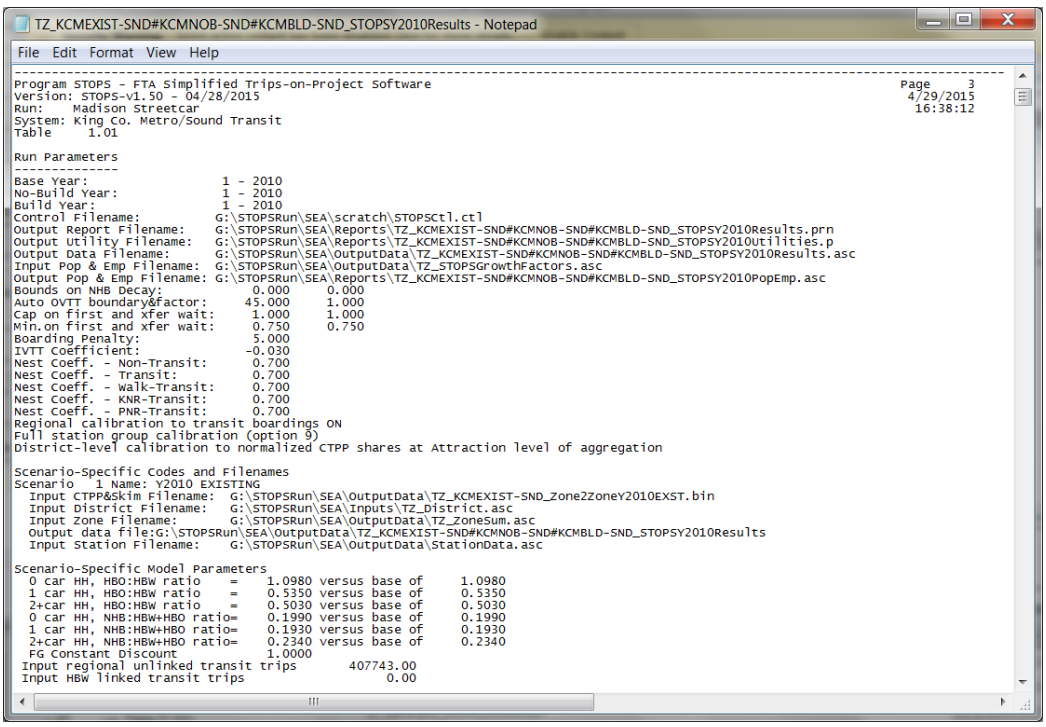
7.1.1 Summary of Key Inputs

Section 1 provides a summary of key model and run parameters including:

- Years for the demand matrices that are associated with the base, no-build, and build scenarios
- Key STOPS model coefficients
- Key parameters associated with each scenario

This part of Section 1 is shown in Figure 70.

Section 1 also contains a summary of the station data that was used for this model run as shown in Figure 71.



```
TZ_KCMEXIST-SND#KCMNOB-SND#KCMBLD-SND_STOPSY2010Results - Notepad
File  Edit  Format  View  Help
-----------------------------------------------------------------------------------------------------------------------------
Program STOPS - FTA Simplified Trips-on-Project Software                                                          Page     3
Version: STOPS-v1.50 - 04/28/2015                                                                                  4/29/2015
Run:    Madison Streetcar                                                                                           16:38:12
System: King Co. Metro/Sound Transit
Table     1.01

Run Parameters
--------------
Base Year:                  1 - 2010
No-Build Year:              1 - 2010
Build Year:                 1 - 2010
Control Filename:          G:\STOPSRun\SEA\scratch\STOPSCtl.ctl
Output Report Filename:    G:\STOPSRun\SEA\Reports\TZ_KCMEXIST-SND#KCMNOB-SND#KCMBLD-SND_STOPSY2010Results.prn
Output Utility Filename:   G:\STOPSRun\SEA\Reports\TZ_KCMEXIST-SND#KCMNOB-SND#KCMBLD-SND_STOPSY2010Utilities.p
Output Data Filename:      G:\STOPSRun\SEA\OutputData\TZ_KCMEXIST-SND#KCMNOB-SND#KCMBLD-SND_STOPSY2010Results.asc
Input Pop & Emp Filename:  G:\STOPSRun\SEA\OutputData\TZ_STOPSGrowthFactors.asc
Output Pop & Emp Filename: G:\STOPSRun\SEA\Reports\TZ_KCMEXIST-SND#KCMNOB-SND#KCMBLD-SND_STOPSY2010PopEmp.asc
Bounds on NHB Decay:            0.000     0.000
Auto OVTT boundary&factor:     45.000     1.000
Cap on first and xfer wait:     1.000     1.000
Min.on first and xfer wait:     0.750     0.750
Boarding Penalty:               5.000
IVTT Coefficient:              -0.030
Nest Coeff. - Non-Transit:      0.700
Nest Coeff. - Transit:          0.700
Nest Coeff. - Walk-Transit:     0.700
Nest Coeff. - KNR-Transit:      0.700
Nest Coeff. - PNR-Transit:      0.700
Regional calibration to transit boardings ON
Full station group calibration (option 9)
District-level calibration to normalized CTPP shares at Attraction level of aggregation

Scenario-Specific Codes and Filenames
Scenario    1 Name: Y2010 EXISTING
  Input CTPP&Skim Filename:  G:\STOPSRun\SEA\OutputData\TZ_KCMEXIST-SND_Zone2ZoneY2010EXST.bin
  Input District Filename:   G:\STOPSRun\SEA\Inputs\TZ_District.asc
  Input Zone Filename:       G:\STOPSRun\SEA\OutputData\TZ_ZoneSum.asc
  Output data file:G:\STOPSRun\SEA\OutputData\TZ_KCMEXIST-SND#KCMNOB-SND#KCMBLD-SND_STOPSY2010Results
  Input Station Filename:    G:\STOPSRun\SEA\OutputData\StationData.asc

Scenario-Specific Model Parameters
  0 car HH, HBO:HBW ratio    =    1.0980 versus base of     1.0980
  1 car HH, HBO:HBW ratio    =    0.5350 versus base of     0.5350
  2+car HH, HBO:HBW ratio    =    0.5030 versus base of     0.5030
  0 car HH, NHB:HBW+HBO ratio=    0.1990 versus base of     0.1990
  1 car HH, NHB:HBW+HBO ratio=    0.1930 versus base of     0.1930
  2+car HH, NHB:HBW+HBO ratio=    0.2340 versus base of     0.2340
  FG Constant Discount            1.0000
 Input regional unlinked transit trips       407743.00
 Input HBW linked transit trips                    0.00
```

Figure 70. Section 1 - Run Parameters

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Version: STOPS-v1.50 - 04/28/2015 4/29/2015
Run: Madison Streetcar 16:38:12
System: King Co. Metro/Sound Transit
Table 1.02

Station Listing for Scenario 3: Y2010 BUILD

S2S#	Sequence	GTF STOP1	GTF STOP2	GTF STOP3	GTF STOP4	Station Name	Code	Group	Type	New/Exist	BoardCount	WalkPen	KNRPen	PNRPen	SameGTFS	DiffGTFS
1	1	26682				SC 5th/Madison	SC5Mad	5-Mad-SC	1	N	0	0.00	0.00	0.00	0.00	0.00
2	2	26683				SCBoren/Mad	SCBorMad	5-Mad-SC	1	N	0	0.00	0.00	0.00	0.00	0.00
3	3	26684				SCBroadwayMad	SCBwyMad	5-Mad-SC	1	N	0	0.00	0.00	0.00	0.00	0.00
4	101	91121	91108			WESTLAKE	CLwestlak	1-CL-CBD	5	E	5425	0.00	0.00	0.00	0.00	0.00
4	102	99565	99455			UNIVERSITY STREET	CLUnivers	1-CL-CBD	5	E	1978	0.00	0.00	0.00	0.00	0.00
4	103	99532	99501			PIONEER SQUARE	CLPioneer	1-CL-CBD	5	E	1646	0.00	0.00	0.00	0.00	0.00
4	104	99621	99623			INTERNATIONAL DISTRI	CLIntDist	1-CL-CBD	3	E	2249	0.00	0.00	0.00	0.00	0.00
4	105	99260	99101			ROYAL BROUGHAM	CLStadium	1-CL-CBD	1	E	851	0.00	0.00	0.00	0.00	0.00
4	106	99256	99111			LANDER	CLSODO	2-CL Hen	1	E	860	0.00	0.00	0.00	0.00	0.00
4	107	99240	99121			BEACON HILL	CLBeaconH	2-CL Hen	3	E	1414	0.00	0.00	0.00	0.00	0.00
4	108	55860	55949			MCCLELLAN	CLMtBaker	2-CL Hen	3	E	1460	0.00	0.00	0.00	0.00	0.00
4	109	56039	55778			EDMUNDS	CLColCity	2-CL Hen	1	E	1314	0.00	0.00	0.00	0.00	0.00
4	110	56159	55656			OTHELLO	CLOthello	2-CL Hen	1	E	1509	0.00	0.00	0.00	0.00	0.00
4	111	55578	56173			HENDERSON	CLRnrBch	2-CL Hen	1	E	1156	0.00	0.00	0.00	0.00	0.00
4	112	99905	99900			SOUTH 154TH STREET	CLTukwll	3-CLSeaT	6	E	2219	0.00	0.00	0.00	0.00	0.00
4	113	99903	99904			SEATAC	CLSeaTac	3-CLSeaT	5	E	4670	0.00	0.00	0.00	0.00	0.00
4	200	26681				SC 4th/Pine	SC4Pine	4-SLU	1	E	0	0.00	0.00	0.00	0.00	0.00
4	201	1630	26680			WESTLAKE HUB	SLUwstHub	4-SLU	1	E	1200	0.00	0.00	0.00	0.00	0.00
4	202	1619	26689			WESTLAKE & 7TH	SLU7th	4-SLU	1	E	200	0.00	0.00	0.00	0.00	0.00
4	203	26665	26690			WESTLAKE & DENNY	SLUDenny	4-SLU	1	E	300	0.00	0.00	0.00	0.00	0.00
4	204	26645	26693			TERRY & THOMAS	SLUThomas	4-SLU	1	E	300	0.00	0.00	0.00	0.00	0.00
4	205	26698	26641			TERRY & MERCER	SLUMercer	4-SLU	1	E	200	0.00	0.00	0.00	0.00	0.00
4	206	26702	26701			LAKE UNION PARK NB	SLULkUnPk	4-SLU	1	E	300	0.00	0.00	0.00	0.00	0.00
4	207	26705	26700			FAIRVIEW & CAMPUS DR	SLUFairvw	4-SLU	1	E	400	0.00	0.00	0.00	0.00	0.00
4	301	S_KS				KING STREET	SNDKingSt	6-SND-Ki	1	E	4960	0.00	0.00	0.00	0.00	0.00
4	302	S_ED				EDMONDS	SNDEdmond	7-SNDEve	2	E	240	0.00	0.00	0.00	0.00	0.00
4	303	S_MU				MUKILTEO	SNDMukilt	7-SNDEve	2	E	120	0.00	0.00	0.00	0.00	0.00
4	304	S_EV				EVERETT	SNDEveret	7-SNDEve	2	E	240	0.00	0.00	0.00	0.00	0.00
4	305	S_TK_NB	S_TK_SB			TUKWILA	SNDTukwil	8-SNDSo	2	E	300	0.00	0.00	0.00	0.00	0.00
4	306	S_KE_NB	S_KE_SB			KENT	SNDKent	8-SNDSo	2	E	1040	0.00	0.00	0.00	0.00	0.00
4	307	S_AU_NB	S_AU_SB			AUBURN	SNDAuburn	8-SNDSo	2	E	900	0.00	0.00	0.00	0.00	0.00
4	308	S_SU_NB	S_SU_SB			SUMNER	SNDSumner	8-SNDSo	1	E	840	0.00	0.00	0.00	0.00	0.00
4	309	S_PU_NB	S_PU_SB			PUYALLUP	SNDPuyall	8-SNDSo	1	E	1040	0.00	0.00	0.00	0.00	0.00
4	310	S_TD				TACOMA DOME	SNDTacDom	8-SNDSo	2	E	740	0.00	0.00	0.00	0.00	0.00
4	311	S_ST				SOUTH TACOMA	SNDSTacom	8-SNDSo	2	E	120	0.00	0.00	0.00	0.00	0.00
4	312	S_LW				LAKEWOOD	SNDLakewo	8-SNDSo	2	E	180	0.00	0.00	0.00	0.00	0.00
4	401	TL_TD				TACOMA DOME TL STATI	TLTacDome	9-TL	1	E	800	0.00	0.00	0.00	0.00	0.00
4	402	TL_25				SOUTH 25TH STREET	TLS25th	9-TL	1	E	200	0.00	0.00	0.00	0.00	0.00
4	403	TL_US				UNION STATION\SOUTH	TLUnStat	9-TL	1	E	900	0.00	0.00	0.00	0.00	0.00

Figure 71. Station Listing

7.1.2 Summary of Existing Scenario Results Before Station Group Calibration

Section 2 summarizes STOPS results for the existing scenario before the station group calibration process begins. The information in this section provides an indication of how well STOPS can calibrate itself to local conditions using just CTPP estimates of attraction district transit share, regional unlinked trips, and HBW linked trips, (if provided). This information can be helpful in determining how well STOPS understands the particular markets being modeled and may provide an indication that additional refinement to the inputs are required before STOPS is used to forecast project linked trips.

Table 2.01 (see Figure 72) provides a summary of the CTPP person and transit trips and compares these numbers to the linked trips estimated from user-coded estimates of linked and unlinked trips.

This information is followed by a district summary of CTPP Journey-to-Work productions and attractions by transit and for all modes of travel and by production and attraction transit constants computed by STOPS during initial calibration. ***The information in the district-level summary can be copied into the "ImportDistrictCalibration" worksheet of the STOPS replication spreadsheet.***

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Run: Madison Streetcar 16:38:12
System: King Co. Metro/Sound Transit
Table 2.01

Initial Calibration Statistics
Regional CTPP all-mode trips (flows*1.5): 2382373.76
Regional CTPP transit trips (flows*1.5): 152769.33
Intrazonal ctpp transit trips 1558.10
Transit boarding target 407743.00
HBW linked trip target (coded value or boardings/1.4 * 40%) 116498.00
CTPP adjustment factor 0.7626
Estimated CTPP Linked Trips for Calibration: 116498.02

District-level JTW Flows and HBW Transit Constants

District	Transit JTW Productions 0-car	1-car	2+car	Transit JTW Attractions 0-car	1-car	2+car	All-Mode JTW Productions 0-car	1-car	2+car	All-Mode JTW Attractions 0-car	1-car	2+car	----Production Constants--- 0-car	1-car	2+car	----Attraction Constants--- 0-car	1-car	2+car
1 CBD	884.1	538.3	124.0	4215.2	14218.4	21065.4	2803.4	3641.6	860.9	7512.3	31156.9	65076.7	0.000000	0.000000	0.000000	-0.020677	-1.047177	-1.5883
2 SSeat	2545.5	4093.2	4303.8	2190.4	3682.6	4574.8	5153.1	20058.8	40393.6	5375.0	25752.4	73329.4	0.000000	0.000000	0.000000	0.277021	-1.189640	-1.8127
3 Tukwl	1267.1	2859.7	3072.4	953.3	1090.7	1161.0	3395.7	21019.0	53504.4	3103.3	23044.2	76940.0	0.000000	0.000000	0.000000	0.149068	-1.974258	-2.8968
4 Aubur	905.1	1983.0	3158.6	708.0	785.9	930.6	3911.0	29694.7	99329.8	3864.3	27087.1	101865.7	0.000000	0.000000	0.000000	0.388239	-1.727106	-2.6014
5 SLU	3969.2	6264.7	3337.5	2684.7	5563.0	6082.5	8917.5	29590.7	30374.2	6390.4	27685.8	58668.7	0.000000	0.000000	0.000000	0.016389	-1.244346	-1.7433
6 NSeat	3589.0	9671.4	10224.2	2621.4	4893.9	5248.7	8760.3	46946.8	101083.9	7305.7	35591.5	84658.4	0.000000	0.000000	0.000000	0.081168	-1.156797	-1.6094
7 Evere	1033.9	3014.4	6720.8	831.4	1256.9	1776.2	6219.0	53953.2	229639.3	5469.2	43848.5	176612.4	0.000000	0.000000	0.000000	2.463716	-0.354373	-1.0845
8 Tacom	1756.9	2150.8	3092.9	1477.8	1522.7	1804.5	8134.5	56355.1	185929.8	6963.3	46993.6	155919.2	0.000000	0.000000	0.000000	5.835542	0.247136	-0.8611
9 West	1385.1	4641.0	8620.8	1827.2	3394.4	4061.2	7118.1	70959.9	296250.3	8852.3	74150.1	267210.7	0.000000	0.000000	0.000000	-0.305410	-1.890401	-2.6077
10 Other	558.2	2109.1	5661.6	390.0	924.6	1614.8	3348.8	24338.4	111469.2	2937.1	21302.0	88641.7	0.000000	0.000000	0.000000	12.770542	5.709069	4.6038
11 Other	5.7	7.3	5.2	0.4	0.0	2.2	15.6	92.3	222.0	4.1	38.4	135.7	0.000000	0.000000	0.000000	2.581241	0.000000	-1.5076

Figure 72. Initial Calibration Statistics

Table 2.02 (Figure 73) provides a listing of trips by production district and station group. Table 2.03 provides a similar table for trips by attraction district. Together these two tables can be useful in determining where modeled group volumes begin and end their trips. This can be an important clue about the reasonableness of STOPS estimates of transit demand. ***If calibration Types 7 or 8 are selected, Tables 2.02 and 2.03 are repeated 5 more times for each iteration of the district calibration process.***

Tables 2.04 and 2.05[27] are shown in Figure 74. Table 2.04 presents the station group-to-station group ridership for the existing scenario and current year prior to group calibration. Table 2.05 shows the factors that were computed during the station group calibration that will be used to create the final set of model results.

Ideally, the ridership estimates shown in the "TOTAL" row match the "COUNTS" and the "GOAL" role reasonably well. When this happens, the factors in Table 2.05 are approximately equal to 1.0 and (0.8 to 1.2) and the station group factors result in modest changes to demand. As shown in the Seattle example, this is true for the existing SLU streetcar and much of the Central Link system. On the other hand, the Tacoma Link (TL) and Vashon Ferry (FEVash) have much larger factors. This does not present a problem for this analysis since neither service has a large impact on the project but could be problematic for a ferry analysis or a project to extend the Tacoma Link streetcar project. In the case of the later, it would be necessary to add Pierce County bus service to fully understand the role of the streetcar in Tacoma[28].

Immediately following Table 2.04 is a statement that "all GTFS stations found in station input. This means that all Fixed Guideway stop_ids that are part of paths used by each CTPP JTW flow record were found in the station data base.

On occasion, STOPS may find some stations in the CTPP JTW flow records that are not included in the station file. In this case, STOPS will generate a message similar to:

```
WARNING:    1 GTFS station(s) were missing from station input
    1: scenario=  1, GTFS Station_ID=55656
```

In general, the user should code all fixed guideway stop_ids into a station record[29]. This is done by returning to Step 2. Specifying Station Locations and adding the stop_id to an existing or new station record. When this is done, the STOPS batch step can be rerun. It is not necessary to re-run any other step.

[27] These station group-to-station group ridership tables before calibration appear as Tables 2.04 and 2.05 for Group Calibration Types 00, 01, 06, and 09. They appear as Tables 2.16 and 2.17 for Group Calibration Types 07 and 08.
[28] When Pierce County transit is added, Tacoma Link ridership is properly estimated.
[29] If the stop_id is completely irrelevant to the project being modeled, this step can be skipped. For instance, Tacoma Link stop_ids can be removed from the station file with little or no impact on the Seattle Streetcar.

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Program STOPS - FTA Simplified Trips-on-Project Software                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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Run: Madison Streetcar
System: King Co. Metro/Sound Transit
Table 2.02

Production District - Station Group Results - Iteration 1
Total Estimated Unlinked Trips Before Adjustment= 303825.01
Total Target Unlinked Trips= 407743.00
Expected adjustment for unlinked trips= 1.3420

Ridership at stations with counts by mode
Mode: 0 Modeled ridership: 39779.70
Mode: 2 Modeled ridership: 12637.02
Mode: 3 Modeled ridership: 12.18
Mode: 4 Modeled ridership: 392.29
```

District	Station Groups CL-CBD	CL Hen	CLSeaT	SLU	Mad-SC	SND-Ki	SNDEve	SNDSo	TL	FEHarb	FEVash	Total
1 CBD	1397	19	0	342	0	25	0	0	4	3	0	1794
2 SSeat	870	8034	179	186	0	65	0	15	12	225	0	9589
3 Tukwi	173	3069	3294	86	0	16	0	267	49	0	0	6957
4 Aubur	392	140	1487	55	0	19	11	2573	910	0	0	5590
5 SLU	1326	82	0	2727	0	67	5	0	29	1	0	4240
6 NSeat	843	13	0	126	0	103	229	0	20	1	29	1367
7 Evere	488	0	0	102	0	81	1839	0	16	0	0	2528
8 Tacom	343	13	38	9	0	14	0	4275	8178	0	23	12897
9 West	1322	407	1256	192	0	71	45	2671	149	1	0	6117
10 Other	124	38	1051	36	0	5	204	19	71	0	105	1657
11 Other	0	0	0	0	0	0	0	6	89	0	0	97
12 BAS12	0	0	0	0	0	0	0	0	0	0	0	0
Total	7283	11819	7308	3866	0	471	2336	9829	9532	233	158	52840

Figure 73. Production District - Station Group Results

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```
Program STOPS - FTA Simplified Trips-on-Project Software                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                
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Run: Madison Streetcar
System: King Co. Metro/Sound Transit
Table 2.04

Station Group Boardings Prior to Adjustment
Scenario 1: Y2010 EXISTING
Raw linked transit trips: 241028.00
Raw unlinked transit trips: 303825.01
Target unlinked transit trips: 407743.00
Regional calibration: 1.34
```

Origin Group	Destination Group 1 CL-CBD	2 CL Hen	3 CLSeaT	4 SLU	5 Mad-SC	6 SND-Ki	7 SNDEve	8 SNDSo	9 TL	10 FEHarb	11 FEVash	TOTAL	GOAL	COUNT
1-CL-CBD:	5202	5582	2894	0	0	0	0	0	0	0	0	13678	12149	12149
2-CL Hen:	5582	2033	972	0	0	0	0	0	0	0	0	8588	7713	7713
3-CLSeaT:	2894	972	278	0	0	0	0	0	0	0	0	4145	6889	6889
4-SLU :	0	0	0	3866	0	0	0	0	0	0	0	3866	2900	2900
5-Mad-SC:	0	0	0	0	0	0	0	0	0	0	0	0	-	-
6-SND-Ki:	0	0	0	0	0	0	985	2907	0	0	0	3892	4960	4960
7-SNDEve:	0	0	0	0	0	985	514	0	0	0	0	1499	600	600
8-SNDSo :	0	0	0	0	0	2907	0	4339	0	0	0	7246	5160	5160
9-TL :	0	0	0	0	0	0	0	0	9532	0	0	9532	3100	3100
10-FEHarb:	0	0	0	0	0	0	0	0	0	234	0	234	1600	1600
11-FEVash:	0	0	0	0	0	0	0	0	0	0	158	158	700	700
TOTAL :	13678	8588	4145	3866	0	3892	1499	7246	9532	234	158	52840	-	-
GOAL :	12149	7713	6889	2900	-	4960	600	5160	3100	1600	700	-	45771	-
COUNT :	12149	7713	6889	2900	-	4960	600	5160	3100	1600	700	-	-	45771

```
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Run: Madison Streetcar
System: King Co. Metro/Sound Transit
Table 2.05

Station Group Boardings Factor for Application to Later Iterations
```

Origin Group	Destination Group 1 CL-CBD	2 CL Hen	3 CLSeaT	4 SLU	5 Mad-SC	6 SND-Ki	7 SNDEve	8 SNDSo	9 TL	10 FEHarb	11 FEVash
1-CL-CBD:	0.68	0.77	1.49	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2-CL Hen:	0.77	0.87	1.69	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3-CLSeaT:	1.49	1.69	3.29	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4-SLU :	1.00	1.00	1.00	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5-Mad-SC:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6-SND-Ki:	1.00	1.00	1.00	1.00	1.00	1.00	0.60	1.48	1.00	1.00	1.00
7-SNDEve:	1.00	1.00	1.00	1.00	1.00	0.60	0.04	1.00	1.00	1.00	1.00
8-SNDSo :	1.00	1.00	1.00	1.00	1.00	1.48	1.00	0.22	1.00	1.00	1.00
9-TL :	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	1.00	1.00
10-FEHarb:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	6.84	1.00
11-FEVash:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	4.42

Figure 74. Station Group Boardings Prior to Adjustment

7.1.3 Summary of Station Group Calibration Process

Section 3 summarizes the results of the station group calibration process. Tables 3.01, 3.02, and 3.03 (Figure 75) shows the group-to-group ridership for the existing, no-build, and build scenarios. In the example provided, these tables reveal that:

- Existing daily linked trips in 2010 (317,222) would have grown to 317,991 with the extension of the SLU streetcar to the West Lake Central Link station in the 2010 no-build scenario. Streetcar ridership would have grown from 2,919 to 3,633.

- Daily linked trips in the 2010 build scenario would have grown to 319,418. Although not shown in this screen shot, the new Madison Streetcar (group 5) would attract 3,378 trips in the 2010 build scenario.

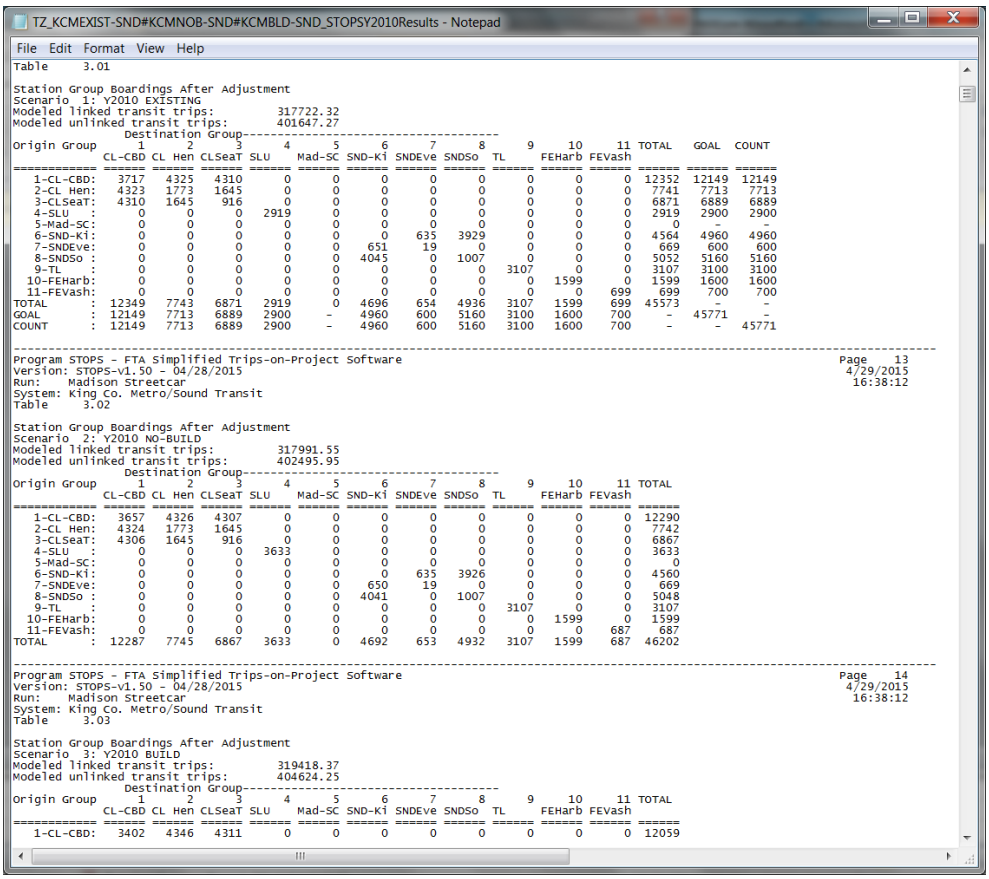

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Table      3.01

Station Group Boardings After Adjustment
Scenario  1: Y2010 EXISTING
Modeled linked transit trips:          317722.32
Modeled unlinked transit trips:        401647.27
                  Destination Group-----------------------------------
Origin Group       1       2       3       4       5       6       7       8       9      10      11 TOTAL   GOAL  COUNT
             CL-CBD CL Hen CLSeaT SLU    Mad-SC SND-Ki SNDEve SNDSo  TL     FEHarb FEVash
============ ====== ====== ====== ====== ====== ====== ====== ====== ====== ====== ====== ====== ====== ======
   1-CL-CBD:   3717   4325   4310      0      0      0      0      0      0      0      0  12352  12149  12149
   2-CL Hen:   4323   1773   1645      0      0      0      0      0      0      0      0   7741   7713   7713
   3-CLSeaT:   4310   1645    916      0      0      0      0      0      0      0      0   6871   6889   6889
   4-SLU   :      0      0      0   2919      0      0      0      0      0      0      0   2919   2900   2900
   5-Mad-SC:      0      0      0      0      0      0      0      0      0      0      0      0      -      -
   6-SND-Ki:      0      0      0      0      0      0    635   3929      0      0      0   4564   4960   4960
   7-SNDEve:      0      0      0      0      0    651     19      0      0      0      0    669    600    600
   8-SNDSo :      0      0      0      0      0   4045      0   1007      0      0      0   5052   5160   5160
   9-TL    :      0      0      0      0      0      0      0      0   3107      0      0   3107   3100   3100
  10-FEHarb:      0      0      0      0      0      0      0      0      0   1599      0   1599   1600   1600
  11-FEVash:      0      0      0      0      0      0      0      0      0      0    699    699    700    700
TOTAL      :  12349   7743   6871   2919      0   4696    654   4936   3107   1599    699  45573      -      -
GOAL       :  12149   7713   6889   2900      -   4960    600   5160   3100   1600    700      -  45771      -
COUNT      :  12149   7713   6889   2900      -   4960    600   5160   3100   1600    700      -      -  45771

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Program STOPS - FTA Simplified Trips-on-Project Software                                                          Page    13
Version: STOPS-v1.50 - 04/28/2015                                                                                  4/29/2015
Run:    Madison Streetcar                                                                                           16:38:12
System: King Co. Metro/Sound Transit
Table      3.02

Station Group Boardings After Adjustment
Scenario  2: Y2010 NO-BUILD
Modeled linked transit trips:          317991.55
Modeled unlinked transit trips:        402495.95
                  Destination Group-----------------------------------
Origin Group       1       2       3       4       5       6       7       8       9      10      11 TOTAL
             CL-CBD CL Hen CLSeaT SLU    Mad-SC SND-Ki SNDEve SNDSo  TL     FEHarb FEVash
============ ====== ====== ====== ====== ====== ====== ====== ====== ====== ====== ====== ======
   1-CL-CBD:   3657   4326   4307      0      0      0      0      0      0      0      0  12290
   2-CL Hen:   4324   1773   1645      0      0      0      0      0      0      0      0   7742
   3-CLSeaT:   4306   1645    916      0      0      0      0      0      0      0      0   6867
   4-SLU   :      0      0      0   3633      0      0      0      0      0      0      0   3633
   5-Mad-SC:      0      0      0      0      0      0      0      0      0      0      0      0
   6-SND-Ki:      0      0      0      0      0      0    635   3926      0      0      0   4560
   7-SNDEve:      0      0      0      0      0    650     19      0      0      0      0    669
   8-SNDSo :      0      0      0      0      0   4041      0   1007      0      0      0   5048
   9-TL    :      0      0      0      0      0      0      0      0   3107      0      0   3107
  10-FEHarb:      0      0      0      0      0      0      0      0      0   1599      0   1599
  11-FEVash:      0      0      0      0      0      0      0      0      0      0    687    687
TOTAL      :  12287   7745   6867   3633      0   4692    653   4932   3107   1599    687  46202

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Program STOPS - FTA Simplified Trips-on-Project Software                                                          Page    14
Version: STOPS-v1.50 - 04/28/2015                                                                                  4/29/2015
Run:    Madison Streetcar                                                                                           16:38:12
System: King Co. Metro/Sound Transit
Table      3.03

Station Group Boardings After Adjustment
Scenario  3: Y2010 BUILD
Modeled linked transit trips:          319418.37
Modeled unlinked transit trips:        404624.25
                  Destination Group-----------------------------------
Origin Group       1       2       3       4       5       6       7       8       9      10      11 TOTAL
             CL-CBD CL Hen CLSeaT SLU    Mad-SC SND-Ki SNDEve SNDSo  TL     FEHarb FEVash
============ ====== ====== ====== ====== ====== ====== ====== ====== ====== ====== ====== ======
   1-CL-CBD:   3402   4346   4311      0      0      0      0      0      0      0      0  12059
```

Figure 75. Station Group Boardings After Adjustment

The next set of tables in Section 3 present an assessment of the number of trips added by station factoring. These Tables include

- Table 3.05 – Group-to-Group Build Unlinked Transit Trips
- Table 3.06 – Group-to-Group Build Unlinked Transit Trips (Trips added by Group Factors)
- Table 3.07 – Group-to-Group Project Unlinked Transit Trips
- Table 3.08 – Station-to-Station Project Unlinked Transit Trips (Trips added by Group Factors)

These tables show the total number of modeled trips and those that were added by the group factoring process for the total Build system and for just those trips that are identified as being project trips.

7.1.4 Summary of Project Results

Section 4 presents the trips on the project made by travelers from all household types using all modes of transit. Table 4.01 presents district-to-district flows (in production/attraction format) for all transit trips in the Build scenario. Table 4.02 presents the number of incremental trips (build – no-build) and Table 4.03 presents the district-to-district flows for just those trips that use the project at some point during the journey. As shown in the example, the Madison Street Streetcar will generate 1,427 new transit tips and attract 3,378 trips on the project.

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Version: STOPS-v1.50 - 04/28/2015 4/29/2015
Run: Madison Streetcar 16:38:12
System: King Co. Metro/Sound Transit
Table 4.02

*** WEEKDAY INCREMENTAL LINKED TRANSIT TRIPS (All Transit/All car HH) (VS. NO-BUILD) ***
District to District MODEL Summary for Scenario 3: Y2010 BUILD
All Purposes All Transit All Access All car HH

Idist	CBD	SSeat	Tukwi	Aubur	SLU	NSeat	Evere	Tacom	West	Other	Other	Total
CBD	395	39	0	0	34	0	0	0	1	0	0	469
SSeat	174	45	1	0	55	7	0	0	1	1	0	284
Tukwi	8	28	0	-6	8	1	0	0	0	0	0	39
Aubur	9	14	2	0	5	2	0	0	0	0	0	31
SLU	349	83	3	0	30	0	0	0	0	0	0	465
NSeat	42	18	-1	0	6	0	0	0	-1	0	0	63
Evere	4	6	0	0	1	0	0	0	0	0	0	11
Tacom	4	-1	0	0	0	0	0	0	0	0	0	4
West	29	14	0	0	11	1	0	0	0	0	0	56
Other	3	-2	0	0	3	0	0	0	0	0	0	4
Other	0	0	0	0	0	0	0	0	0	0	0	0
Total	1016	245	5	-5	153	10	0	0	1	2	0	1427

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Version: STOPS-v1.50 - 04/28/2015 4/29/2015
Run: Madison Streetcar 16:38:12
System: King Co. Metro/Sound Transit
Table 4.03

*** WEEKDAY LINKED TRANSIT TRIPS ON PROJECT (All Transit/All car HH)***
District to District MODEL Summary for Scenario 3: Y2010 BUILD
All Purposes All Transit All Access All car HH

Idist	CBD	SSeat	Tukwi	Aubur	SLU	NSeat	Evere	Tacom	West	Other	Other	Total
CBD	881	96	0	0	82	0	0	0	2	17	0	1078
SSeat	436	53	1	0	128	13	0	0	2	7	0	640
Tukwi	23	26	0	0	18	1	0	0	0	0	0	68
Aubur	30	13	0	0	11	3	0	0	0	0	0	58
SLU	935	198	7	1	78	0	0	1	1	0	0	1221
NSeat	55	32	0	0	11	0	0	0	0	0	0	99
Evere	8	11	0	0	3	0	0	0	0	0	0	21
Tacom	6	1	0	0	2	0	0	0	0	0	0	9
West	87	16	0	0	26	1	0	0	0	0	0	130
Other	16	19	0	0	18	0	0	0	0	0	0	54
Other	0	0	0	0	0	0	0	0	0	0	0	0
Total	2477	466	8	1	376	19	1	1	6	24	0	3378

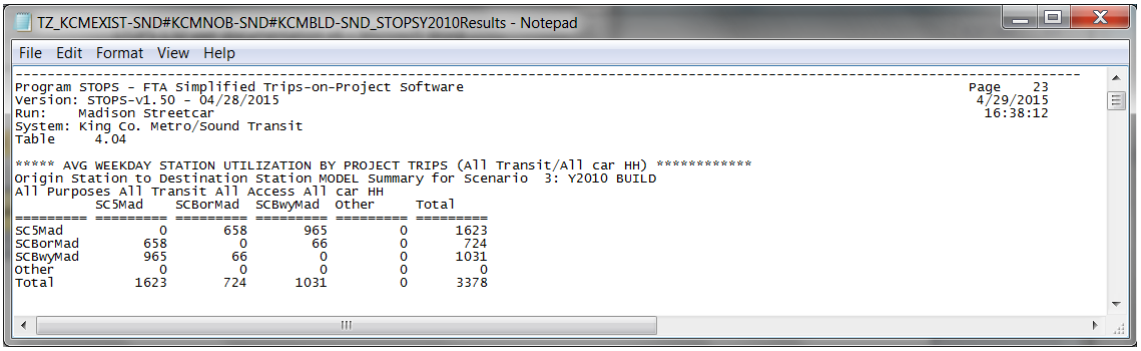
Figure 76. Summary of Project Results

The next table, (Table 4.04 shown in Figure 77) shows the origin (boarding) and destination (alighting) station for project trips. In this sample, only project stations are shown. This happens when (as in this example) all existing stations are coded as NewStation=0 (or blank) and the project itself is coded with NewStation=1. This table will be expanded to include more stations if NewStation is set to 2, 3, or 4[30].

When stations other than project stations are added to this report, the number of boardings may exceed the total number of linked trips on the project. This happens because project trips may be able to transfer from the project to a connecting station and therefore appear as a station boarding in 2 or more places.

[30] Newstation=4 should be used if the only purpose is to cause the station to print on this report since "2" and "3" are used to flag project trips connecting between two existing sections.

Figure 77. Origin Station to Destination Station Project Flows



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Program STOPS - FTA Simplified Trips-on-Project Software                                   Page     23
Version: STOPS-v1.50 - 04/28/2015                                                           4/29/2015
Run:    Madison Streetcar                                                                   16:38:12
System: King Co. Metro/Sound Transit
Table     4.04

***** AVG WEEKDAY STATION UTILIZATION BY PROJECT TRIPS (All Transit/All car HH) ************
Origin Station to Destination Station MODEL Summary for Scenario  3: Y2010 BUILD
All Purposes All Transit All Access All car HH
          SC5Mad    SCBorMad  SCBwyMad  Other     Total
========= ========= ========= ========= ========= =========
SC5Mad            0       658       965         0      1623
SCBorMad        658         0        66         0       724
SCBwyMad        965        66         0         0      1031
Other             0         0         0         0         0
Total          1623       724      1031         0      3378
```

7.1.5 Summary of Project Results for Trips on Fixed Guideway (FG) Modes

This section provides information similar to that presented in Section 4 except that reported trips are just those that are attracted to the fixed guideway portion of the system.

7.1.6 Summary of Project Results for Trips Made by 0-Car Households

This section provides information similar to that presented in Section 4 except that trips are reported for members of 0-car households only.

7.1.7 Summary of Project Results for Trips on Fixed Guideway (FG) Modes Made by 0-Car Households

This section provides information similar to that presented in Section 4 except that trips are reported for members of 0-car households making trips on the fixed guideway portion of the system.

7.1.8 Summary of Impacts on Automobile Person Miles of Travel

Table 8.01 (see Figure 78) presents the incremental (build minus no-build) estimate of automobile person miles of travel that are a result of the project. These results are displayed on a district-to-district (production/attraction) basis. This statistic can be converted to vehicle miles of travel saved by the project by using locally-derived estimates of vehicle occupancy to convert person miles to vehicle miles.

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Program STOPS - FTA Simplified Trips-on-Project Software                                                    Page    40
Version: STOPS-v1.50 - 04/28/2015                                                                            4/29/2015
Run:    Madison Streetcar                                                                                     16:38:12
System: King Co. Metro/Sound Transit
Table     8.01
```

District to District Incremental WEEKDAY AUTOMOBILE PMT Summary for Scenario 3: Y2010 BUILD
All Purposes All Transit All Access All car HH

Idist	CBD	SSeat	Tukwi	Aubur	SLU	NSeat	Evere	Tacom	West	Other	Other	Total
CBD	-343	-59	0	0	-47	0	0	0	-11	-23	0	-482
SSeat	-395	-259	-7	-1	-184	-53	0	0	-19	-39	0	-958
Tukwi	-75	-233	-2	66	-63	-8	-1	1	-6	0	0	-322
Aubur	-205	-269	-24	0	-111	-49	0	0	-2	0	0	-660
SLU	-724	-247	-30	-6	-78	0	0	-7	3	0	0	-1088
NSeat	-286	-142	23	3	-36	0	0	0	20	1	0	-417
Evere	-72	-100	4	0	-18	0	0	0	0	0	0	-186
Tacom	-109	17	-2	0	-15	0	0	0	0	0	0	-109
West	-355	-190	-10	0	-166	-17	0	0	0	0	0	-738
Other	-10	37	0	0	-26	0	0	0	0	0	0	2
Other	0	0	0	0	0	0	0	0	0	0	0	0
Total	-2574	-1445	-48	64	-744	-128	0	-6	-16	-61	0	-4959

Figure 78. Incremental Automobile PMT

7.1.9 Comparison of Existing, No-Build and Build Station Boardings by Station Mode of Access

Table 9.01 (shown in Figure 79) shows the station boardings by mode of access for each station in the station database. Boardings are shown for the existing, no-build, and build scenarios. This table represents the mode of access for trips boarding at each station and is the result of the origin-destination assignment. For example, a round trip from suburban station A to urban station B where the passenger drives to station A, takes the train to Station B, and walks to work in the morning (and the reverse in the afternoon) would be shown as 1 PNR boarding at Station A (for the morning trip) and 1 walk boarding at Station B for the afternoon trip. The station activity at each station (boardings and alightings) is typically twice as high as the boarding information shown in this table unless travel is highly asymmetrical.

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Program STOPS - FTA Simplified Trips-on-Project Software                                                    Page    42
Version: STOPS-v1.50 - 04/28/2015                                                                            4/29/2015
Run:    Madison Streetcar                                                                                     16:38:12
System: King Co. Metro/Sound Transit
Table     9.01
```

***** AVG WEEKDAY STATION UTILIZATION (All Transit/All car HH) **********
Comparison of Station Boardings by Scenario
All Purposes All Transit All car HH

	Y2010 EXISTING					Y2010 NO-BUILD					Y2010 BUILD				
Station Name	WLK	KNR	PNR	XFR	ALL	WLK	KNR	PNR	XFR	ALL	WLK	KNR	PNR	XFR	ALL
SC 5th/Madison	0	0	0	0	0	0	0	0	0	0	1217	3	0	403	1623
SCBoren/Mad	0	0	0	0	0	0	0	0	0	0	708	4	0	12	724
SCBroadwayMad	0	0	0	0	0	0	0	0	0	0	1007	15	0	9	1031
WESTLAKE	2671	31	0	635	3337	2653	30	0	627	3311	2579	26	0	615	3220
UNIVERSITY STREET	2830	4	0	423	3257	2814	4	0	416	3234	2744	4	0	457	3204
PIONEER SQUARE	2363	3	0	422	2788	2362	4	0	417	2782	2266	3	0	426	2695
INTERNATIONAL DISTRI	898	4	0	1362	2265	900	4	0	1357	2261	890	3	0	1348	2242
ROYAL BROUGHAM	561	21	0	123	705	562	21	0	120	703	565	20	0	112	697
LANDER	1201	12	0	744	1957	1202	12	0	743	1957	1212	12	0	772	1996
BEACON HILL	276	1	0	183	460	276	1	0	183	460	277	1	0	183	460
MCCLELLAN	1243	11	0	522	1776	1244	11	0	521	1777	1248	11	0	510	1770
EDMUNDS	1082	44	0	228	1354	1083	44	0	228	1354	1092	44	0	228	1364
OTHELLO	704	85	0	137	926	705	85	0	137	927	711	85	0	137	933
HENDERSON	718	119	0	431	1268	718	119	0	430	1268	724	120	0	431	1274
SOUTH 154TH STREET	506	938	2793	619	4856	506	938	2789	619	4853	512	935	2787	615	4849
SEATAC	785	107	0	1123	2014	785	106	0	1123	2014	787	108	0	1122	2017
SC 4th/Pine	0	0	0	0	0	604	4	0	433	1041	580	4	0	426	1009
WESTLAKE HUB	631	4	0	286	921	414	0	0	186	600	405	0	0	186	591
WESTLAKE & 7TH	336	0	0	57	393	247	9	0	48	303	230	9	0	48	286
WESTLAKE & DENNY	286	2	0	8	295	248	2	0	9	259	239	2	0	8	249
TERRY & THOMAS	197	1	0	0	198	204	1	0	0	205	204	1	0	0	205
TERRY & MERCER	400	6	0	19	425	437	5	0	42	485	437	5	0	42	484
LAKE UNION PARK NB	142	8	0	1	150	146	9	0	1	156	146	9	0	1	156
FAIRVIEW & CAMPUS DR	489	57	0	3	549	529	64	0	3	596	512	49	0	3	564

Figure 79. Average Weekday Station Utilization by Scenario and Mode of Access

7.1.10 Comparison of Existing, No-Build and Build Route Boardings by Route Mode of Access

Section 10 consists of two tables (10.01 and 10.02) which shows usage of each route by production-end mode of access.[31] Table 10.01 (shown in Figure 80) presents a condensed table with one line in the report for each route. Table 10.02 presents an expanded table with routes broken out by station groups so that the contribution of each station group to each route can be understood. This capability is important in cases where stations are shared by multiple routes but only some of those routes are of interest to the analysis. Tables 10.03 and 10.04 summarize route-level operating statistics (revenue vehicle miles and vehicle hours) by alternative and analysis time period.

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Program STOPS - FTA Simplified Trips-on-Project Software                                                    Page    42
Version: STOPS-v1.50 - 04/28/2015                                                                            4/29/2015
Run:    Madison Streetcar                                                                                    16:38:12
System: King Co. Metro/Sound Transit
Table     9.01

***** AVG WEEKDAY STATION UTILIZATION (All Transit/All car HH) ************
Comparison of Station Boardings by Scenario
All Purposes All Transit  All car HH
```

	Y2010 EXISTING					Y2010 NO-BUILD					Y2010 BUILD				
Station Name	WLK	KNR	PNR	XFR	ALL	WLK	KNR	PNR	XFR	ALL	WLK	KNR	PNR	XFR	ALL
SC 5th/Madison	0	0	0	0	0	0	0	0	0	0	1217	3	0	403	1623
SCBoren/Mad	0	0	0	0	0	0	0	0	0	0	708	4	0	12	724
SCBroadwayMad	0	0	0	0	0	0	0	0	0	0	1007	15	0	9	1031
WESTLAKE	2671	31	0	635	3337	2653	30	0	627	3311	2579	26	0	615	3220
UNIVERSITY STREET	2830	4	0	423	3257	2814	4	0	416	3234	2744	4	0	457	3204
PIONEER SQUARE	2363	3	0	422	2788	2362	4	0	417	2782	2266	3	0	426	2695
INTERNATIONAL DISTRI	898	4	0	1362	2265	900	4	0	1357	2261	890	3	0	1348	2242
ROYAL BROUGHAM	561	21	0	123	705	562	21	0	120	703	565	20	0	112	697
LANDER	1201	12	0	744	1957	1202	12	0	743	1957	1212	12	0	772	1996
BEACON HILL	276	1	0	183	460	276	1	0	183	460	277	1	0	183	460
MCCLELLAN	1243	11	0	522	1776	1244	11	0	521	1777	1248	11	0	510	1770
EDMUNDS	1082	44	0	228	1354	1083	44	0	228	1354	1092	44	0	228	1364
OTHELLO	704	85	0	137	926	705	85	0	137	927	711	85	0	137	933
HENDERSON	718	119	0	431	1268	718	119	0	430	1268	724	120	0	431	1274
SOUTH 154TH STREET	506	938	2793	619	4856	506	938	2789	619	4853	512	935	2787	615	4849
SEATAC	785	107	0	1123	2014	785	106	0	1123	2014	787	108	0	1122	2017
SC 4th/Pine	0	0	0	0	0	604	4	0	433	1041	580	4	0	426	1009
WESTLAKE HUB	631	4	0	286	921	414	0	0	186	600	405	0	0	186	591
WESTLAKE & 7TH	336	0	0	57	393	247	9	0	48	303	230	9	0	48	286
WESTLAKE & DENNY	286	2	0	8	295	248	2	0	9	259	239	2	0	8	249
TERRY & THOMAS	197	1	0	0	198	204	1	0	0	205	204	1	0	0	205
TERRY & MERCER	400	6	0	19	425	437	5	0	42	485	437	5	0	42	484
LAKE UNION PARK NB	142	8	0	1	150	146	9	0	1	156	146	9	0	1	156
FAIRVIEW & CAMPUS DR	489	57	0	3	549	529	64	0	3	596	512	49	0	3	564

Figure 80. Weekday Route Ridership

7.1.11 Summary of Trips by Submode, Access Mode, Auto Ownership, and Scenario

Section 11 presents a summary of linked transit trips by submode, access mode and auto ownership for each scenario (existing, no-build, and build) and for build trips that are identified as linked trips using the project. Four tables are provided:

- Table 11.01: home-based work trips (sample shown in Figure 81)
- Table 11.02: home-based other trips
- Table 11.03: non-home based trips

All model results (including access mode) are presented in production/attraction format.

Linked trips are reported in separate columns for the existing, no-build, and build scenarios. The last set of columns reports project trips which are the defined as any build trips boarding, alighting, or passing through a new station.

[31]Production-end mode of access is the access mode used to connect home to the first transit station/stop used during the trip. This statistic is in production/attraction format.

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Program STOPS - FTA Simplified Trips-on-Project Software                                                                    Page    49
Version: STOPS-v1.50 - 04/28/2015                                                                                            4/29/2015
Run:    Madison Streetcar                                                                                                     16:38:12
System: King Co. Metro/Sound Transit
Table    11.01

SUMMARY OF TRIPS BY SUBMODE, ACCESS MODE, AUTO OWNERSHIP, AND SCENARIO
Purpose Home-Based Work
 STOPS Model Application Model Application AFTER Station Boarding Calibration
                                          | Y2010 EXISTING | Y2010 NO-BUILD | Y2010 BUILD    | Y2010 BUILD    |
 HH Cars Sub-mode            Access mode  |  Model  Survey |  Model  Survey |  Model  Survey |Project Survey |
======= ================== ============= | ======= ======= | ======= ======= | ======= ======= | ======= ======= |
 0 car H Fixed Guideway Only Walk Access  |    1058       0|    1064       0|    1312       0|     293       0|
 0 car H Fixed Guideway Only KNR Access   |     214       0|     215       0|     215       0|       2       0|
 0 car H Fixed Guideway Only PNR Access   |     130       0|     130       0|     130       0|       0       0|
 0 car H Fixed Guideway Only All Access   |    1402       0|    1409       0|    1656       0|     295       0|

 0 car H Fixed Guideway+Bus  Walk Access  |     952       0|     966       0|     988       0|      32       0|
 0 car H Fixed Guideway+Bus  KNR Access   |      68       0|      69       0|      69       0|       1       0|
 0 car H Fixed Guideway+Bus  PNR Access   |      14       0|      15       0|      15       0|       0       0|
 0 car H Fixed Guideway+Bus  All Access   |    1035       0|    1049       0|    1071       0|      33       0|

 0 car H Bus Only            Walk Access  |   18760       0|   18744       0|   18569       0|       0       0|
 0 car H Bus Only            KNR Access   |     692       0|     691       0|     691       0|       0       0|
 0 car H Bus Only            PNR Access   |     233       0|     232       0|     232       0|       0       0|
 0 car H Bus Only            All Access   |   19684       0|   19668       0|   19493       0|       0       0|

 0 car H All Transit         Walk Access  |   20769       0|   20774       0|   20869       0|     326       0|
 0 car H All Transit         KNR Access   |     974       0|     975       0|     975       0|       2       0|
 0 car H All Transit         PNR Access   |     377       0|     377       0|     376       0|       0       0|
 0 car H All Transit         All Access   |   22120       0|   22126       0|   22220       0|     328       0|

 0 car H All Fixed Guideway  Walk Access  |    2010       0|    2030       0|    2300       0|     326       0|
 0 car H All Fixed Guideway  KNR Access   |     282       0|     284       0|     283       0|       2       0|
 0 car H All Fixed Guideway  PNR Access   |     144       0|     144       0|     144       0|       0       0|
 0 car H All Fixed Guideway  All Access   |    2436       0|    2458       0|    2728       0|     328       0|
------- ------------------ ------------- | ------- ------- | ------- ------- | ------- ------- | ------- ------- |
 1 car H Fixed Guideway Only Walk Access  |    1928       0|    1946       0|    2283       0|     389       0|
 1 car H Fixed Guideway Only KNR Access   |     772       0|     778       0|     777       0|      14       0|
 1 car H Fixed Guideway Only PNR Access   |    2681       0|    2678       0|    2681       0|       8       0|
 1 car H Fixed Guideway Only All Access   |    5381       0|    5402       0|    5741       0|     411       0|

 1 car H Fixed Guideway+Bus  Walk Access  |    2002       0|    2074       0|    2230       0|     173       0|
 1 car H Fixed Guideway+Bus  KNR Access   |     436       0|     441       0|     444       0|      15       0|
```

Figure 81. Summary of Linked Transit Trips by Submode, Access Mode, and Auto Ownership

7.1.12 Summary of CTPP Workers and Employees and MPO Estimates of Population and Employment by Scenario

Table 12.01 (shown in Figure 82) presents a district-level summary of the CTPP and assumed level of population and employment that were used to grow the CTPP to represent current and horizon years. The CTPP columns report the workers (the number of employed persons living in each district) and employment (employed persons working in each district). The MPO columns report the Year 2000 estimates of population and employment that are matched to the CTPP and also show the estimates/forecasts for the existing, no-build, and build scenarios that were used to create the demand tables for each scenario.

TZ_KCMEXIST-SND#KCMNOB-SND#KCMBLD-SND_STOPSY2010Results - Notepad

File Edit Format View Help

```
Program STOPS - FTA Simplified Trips-on-Project Software                                                                    Page    54
Version: STOPS-v1.50 - 04/28/2015                                                                                            4/29/2015
Run:    Madison Streetcar                                                                                                   16:38:12
System: King Co. Metro/Sound Transit
Table    12.01

SUMMARY OF DISTRICT LEVEL CTPP, POPULATION, AND EMPLOYMENT
 STOPS Model Application Model Application AFTER Station Boarding Calibration
```

	Y2000 CTPP		MPO POPULATION				MPO EMPLOYMENT			
District	Workers	Emplymnt	Y2000	Existing 2010	No-Build 2010	Build 2010	Y2000	Existing 2010	No-Build 2010	Build 2010
1-CBD	7536	124796	466790	495177	495177	495177	2368658	2001576	2001576	2001576
2-SSeat	68558	118093	1085151	1156433	1156433	1156433	1084711	962375	962375	962375
3-Tukwi	84487	118582	1049947	1107174	1107174	1107174	932643	816632	816632	816632
4-Aubur	135907	138268	1473519	1635832	1635832	1635832	830235	799468	799468	799468
5-SLU	65265	105576	744960	856319	856319	856319	1061054	926524	926524	926524
6-NSeat	163970	121415	2214239	2327445	2327445	2327445	845071	850722	850722	850722
7-Evere	276607	220066	1914705	2266210	2266210	2266210	721383	742265	742265	742265
8-Tacom	341604	298125	2658105	2928666	2928666	2928666	1041990	1051890	1051890	1051890
9-West	363802	335407	3325346	3823085	3823085	3823085	1951564	1970947	1970947	1970947
10-Other	138660	106220	941198	1024222	1024222	1024222	387524	408734	408734	408734
11-Other	365	184	1071	1099	1099	1099	391	362	362	362
Total	1646761	1686732	15875040	17621672	17621672	17621672	11225218	10531499	10531499	10531499
Total of zonal database including unassigned districts										
DB Total	1646761	1686732	15875036	17621670	17621670	17621670	11225220	10531493	10531493	10531493

Figure 82. Summary of District Level CTPP, Population, and Employment

7.1.13 Summary of Highway Time, Distance and Speed

Section 13 reports highway times, distances and speeds for each district-to-district pair. The following tables are provided:

- Table 13.01 – Existing scenario, district-to-district highway time (in minutes)
- Table 13.02 – No-build scenario, district-to-district highway time (in minutes)
- Table 13.03 – Build scenario, district-to-district highway time (in minutes)
- Table 13.04 – Existing scenario, district-to-district highway distance (miles)
- Table 13.05 – No-Build scenario, district-to-district highway distance (miles)
- Table 13.06 – Build scenario, district-to-district highway distance (miles)
- Table 13.07 – Existing scenario, district-to-district highway speed (mph)
- Table 13.08 – No-Build scenario, district-to-district highway speed (mph)
- Table 13.09 – Build scenario, district-to-district highway speed (mph)

A sample report (existing scenario highway time) is shown in Figure 83.

TZ_KCMEXIST-SND#KCMNOB-SND#KCMBLD-SND_STOPSY2010Results - Notepad

File Edit Format View Help

```
Program STOPS - FTA Simplified Trips-on-Project Software                                                    Page    56
Version: STOPS-v1.50 - 04/28/2015                                                                            4/29/2015
Run:    Madison Streetcar                                                                                     16:38:12
System: King Co. Metro/Sound Transit
Table    13.01

*** UNWEIGHTED AVERAGE HIGHWAY TIME (MINUTES) FOR ZONE-TO-ZONE RECORDS WITH CTPP TRIPS ***
District to District Highway Impedance Summary for Scenario  1: Y2010 EXISTING
Idist     CBD      SSeat    Tukwi    Aubur    SLU      NSeat    Evere    Tacom    West     Other    Other    Total
======= ======== ======== ======== ======== ======== ======== ======== ======== ======== ======== ======== ========
CBD        9.7      12.9     24.5     37.1     13.4     18.4     36.0     51.6     27.5     58.3      0.0     17.5
SSeat     18.8      14.4     21.0     35.3     21.4     26.5     47.5     49.9     31.5     59.0     53.3     24.4
Tukwi     28.4      21.1     15.1     25.0     30.9     35.9     56.7     40.2     36.6     64.5      0.0     28.1
Aubur     61.8      55.9     42.4     21.3     65.3     69.0     88.8     26.5     57.3     65.6     38.8     44.1
SLU       15.3      18.0     28.7     40.8     13.6     16.9     37.3     54.2     29.3     62.4     54.5     21.8
NSeat     22.9      25.8     35.6     47.5     20.7     13.3     26.1     62.1     32.3     70.4     39.5     24.6
Evere     57.1      60.8     70.0     83.5     55.7     40.6     27.2    103.9     52.4     73.9     27.7     43.0
Tacom     98.6      92.9     79.2     43.7    103.9    107.1    131.2     23.0     86.1     54.7     28.9     43.7
West      43.0      43.7     41.8     38.4     45.0     44.0     41.8     46.1     28.9     54.1     50.2     37.4
Other    112.1     107.1    103.1     80.3    110.0    109.7     76.5     60.7     80.8     28.3     52.8     69.4
Other     87.8      86.7     69.0     32.0     82.7     72.0     31.0     19.2     73.7     70.9     11.4     39.2
Total     44.0      43.1     44.7     38.6     41.0     34.8     35.5     28.0     41.8     41.7     32.3     38.8
```

Figure 83. Average Highway Time for Existing Scenario

7.1.14 District to District Analysis of Gains and Losses Between No-Build and Build

Section 14 provides a number of tables that help the user understand the degree to which the project appears to change the level of transit coverage or reduce service to existing customers. Each table shows linked transit trips on a district-to-district basis. The following tables are provided:

- Table 14.01. Build Walk Access Transit Trips on Interchanges with Significant Transit Gain (>5%) and Zero No-Build trips. This table shows the number of build transit trips occurring in situations where no one uses transit in the no-build (presumably because no transit is provided). The presence of trips in this category suggests a change in transit service coverage has occurred.
- Table 14.02. Build Walk Linked Transit Trips on Interchanges with Significant Transit Gain (>5%) and Non-Zero No-Build trips. This table is the shows cases where transit grows significantly off of a non-zero base. Generally, trips in this table will be located in geographic proximity to the project or other service enhancements. If not, this table may help the user understand where unintended changes were made to the transit system.
- Table 14.03 Build Walk Access Linked Transit Trips on Interchanges with Significant Transit Loss (>5%). This table shows the number of build trips occurring in places where the number of transit linked trips declines between the no-build and build scenarios.
- Table 14.04 Build Walk Access Linked Transit Trips on Interchanges with no-significant change in transit. This table shows the remaining linked transit trips in the build alternative for cases where the project had little impact on ridership.
- Tables 14.05 through 14.08 repeat Tables 14.01-14.04 but shows no-build trips in the same categories.

These eight tables are repeated in Tables 14.09-14.16 for KNR trips, in Tables 14.17-14.24 for PNR trips, and 14.25-14.32 for All Access Mode trips.

7.1.15 Detailed District-to-District Linked Trips and Selected Station-Station Flows

Section 15 provides a complete set of district-to-district linked trips for each combination of scenario, access mode, auto ownership, trip purpose, and submode. The index provided at the top of the report provides the table number for each condition. For some cases, station-to-station or project trips are also reported.

7.2 Mapping Results

STOPS includes the capability to map many of the results. This option is selected by clicking on "13. Map STOPS Results". When this is done, the dialog shown in Figure 84 appears. The program allows the user to select what types of trips to map including:

- Transit sub-modes. Fixed Guideway only, fixed guideway and bus, bus only and all (default)
- Transit access modes. Walk, kiss-and-ride, park-and-ride, and all (default)
- Trip purpose: Home-based work, home-based other, non-home based, and all (default)
- Household auto ownership: 0 car, 1 car, 2+ car and all (default)
- Production (home) location of trips or attraction (non-home) location
- Destination district (for Production Plots) or origin district (for attraction plots): Any one district or all (drop down list with the default of blank meaning all districts)
- Scenario: existing, no-build, build (map all transit trips associated with the project scenario), project (map project trips, default), trip gains (increases in linked trips for build vs. no-build), or trip losses (decreases in linked trips for build vs. no-build).

When the defaults are selected, a GIS screen appears showing the origin location for all trips using the project (shown in Figure 85).

When a district, a submode, and an access mode are selected, STOPS also displays the travel times to a specific zone in the destination district (the zone in the district definition file where the district label is coded).

A sample map showing walk-to-Fixed Guideway Only trips to the CBD is shown in Figure 86. A small black square marks the destination zone for the travel time estimates. Blue, green and gray shading is used to denote travel times that have no bus time as part of the skim. Orange, yellow and red are used to denote travel times that do have bus travel times. Since bus is not part of the Fixed Guideway Only path, no zones are shaded with yellow or red.

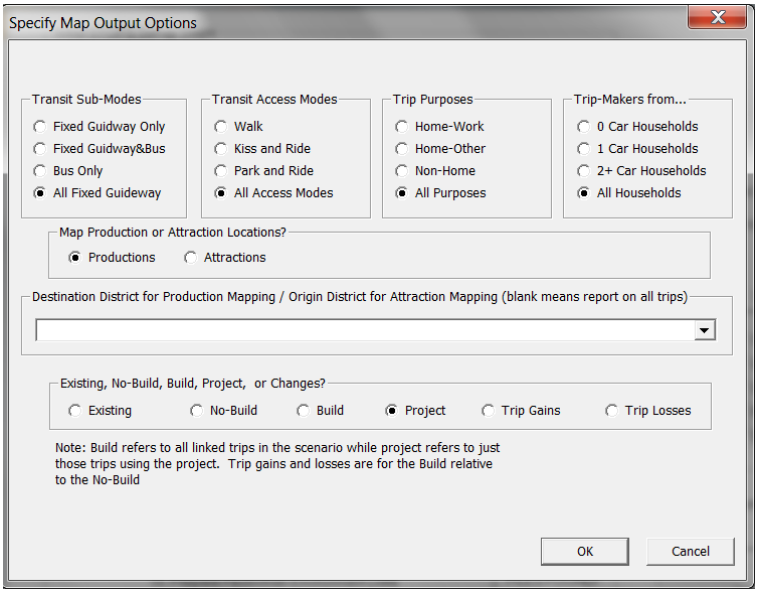

Figure 84. Dialog for Specifying Map Output Options

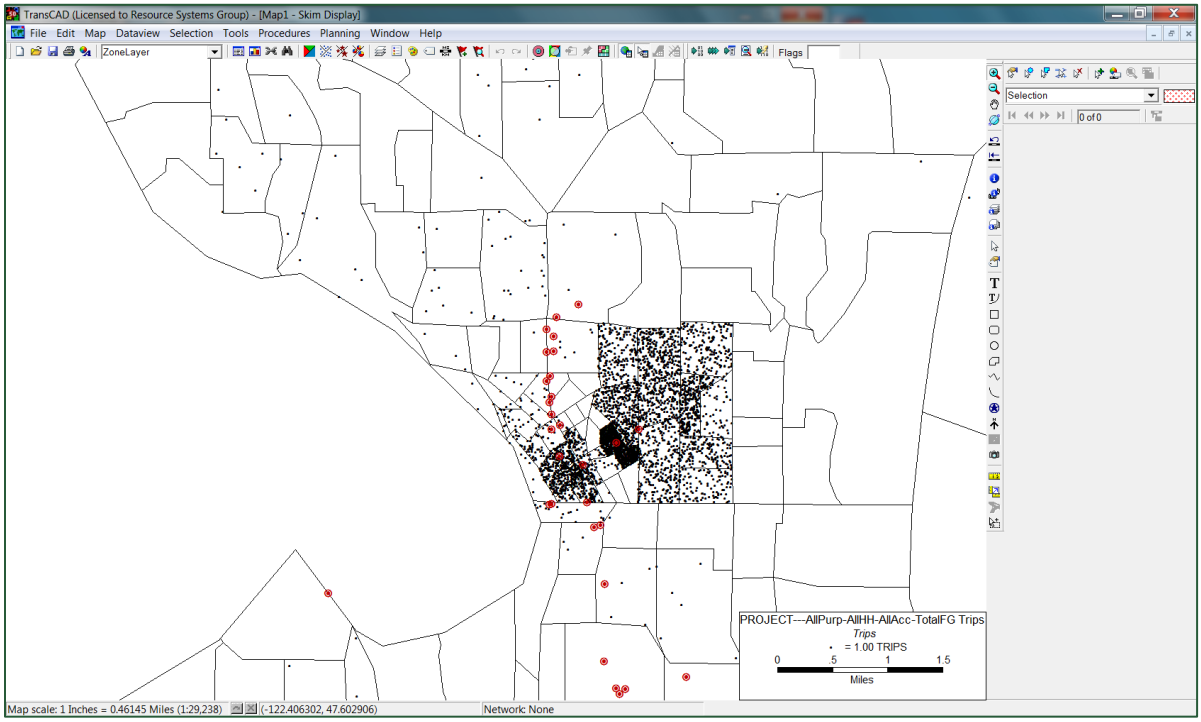

Figure 85. Map of Project Trips to All Destinations

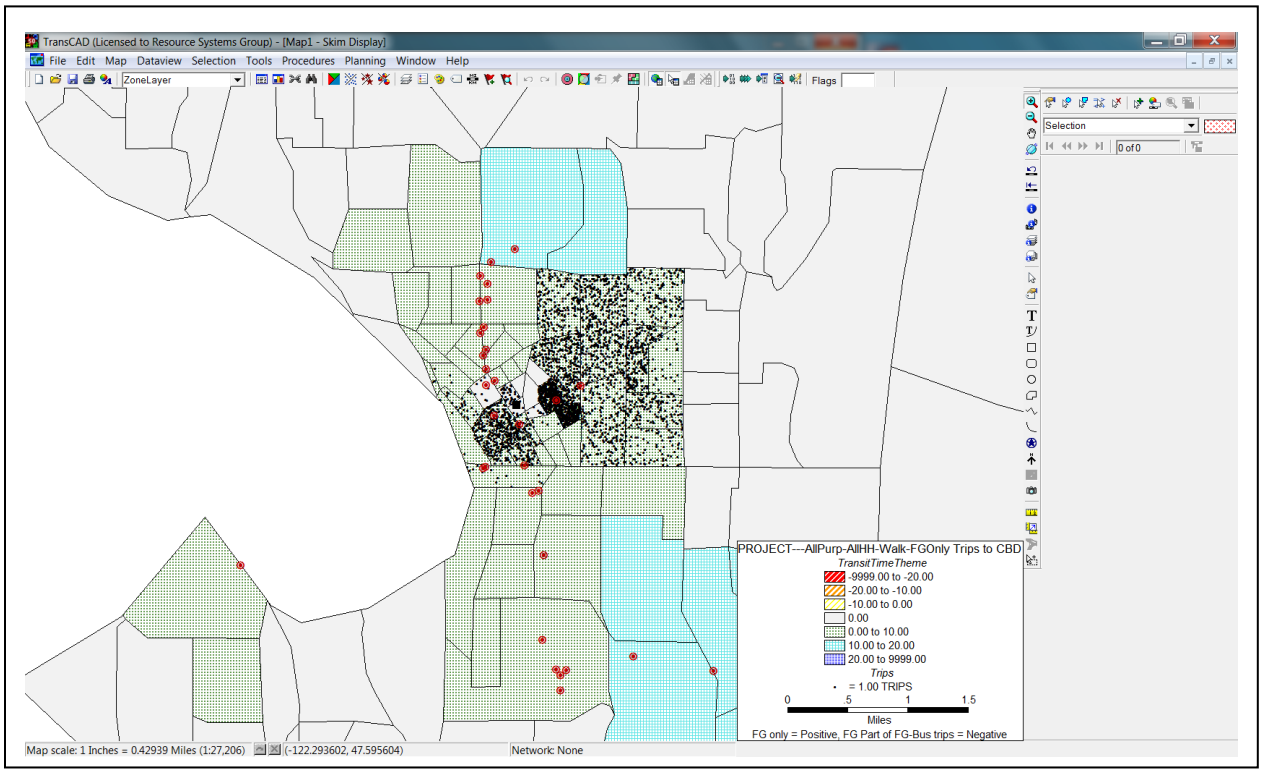

Figure 86. Map of Walk Access Fixed Guideway Only Project Trips to CBD

7.3 Querying Zone-to-Zone Impedances and Trips

Option 14 ("Z2Z Query") allows the user to prepare a report summarizing travel times and trips by mode for a specific zone-to-zone interchange. This information can be entered into the STOPS replicator spreadsheet to show how STOPS estimates the travel demand for a specific interchange.

To use the queary function, the user must type a valid zone name in both the "From Zone" and "To" text boxes and then click "14. Z2Z Query." When typing a zone name, remember to zero fill all state and county FIPS codes (SSCCC) and then have another 6 characters (7 characters for block groups) with containing the TAZ, tract or block group. This second part is right justified and is blank filled.

Examples:

- State 3, county 1, TAZ 123: 03001 123 (3 blanks)
- State 31, county 37, TAZ 1442: 31037 1442 (2 blanks)
- State 15, county 12, tract 10001 15012 10001 (1 blank)
- State 15, county 12, block group 100011: 15012 10001 (1 blank)

When the Z2Z Query button is clicked, STOPS will read the datasets that were prepared by the most recent run and report on impedances and times for each combination of:

- Scenario (no-build, build, and build)
- Access mode (walk, kiss-and-ride, and park-and-ride)
- Path (fixed guideway+bus [all transit path], fixed guideway only, and bus-only)

Sections of this report can be pasted and copied into the STOPS replicated spreadsheet to review the computations made by STOPS to estimate ridership.

8. Procedures for Handling Large Problems, Bus Projects, and Unusual Scheduling Issues

This section describes procedures for handling large problem, bus projects, and unusual scheduling issues.

8.1 Large Problem Sizes

STOPS is designed to estimate fixed guideway transit trips on a project using data representing travel demand and transportation supply that is available throughout an entire metropolitan area. It was developed and tested for many of the largest cities in the United States including Houston, Denver, Seattle, and San Diego. Some metropolitan areas are larger or have more complex transit services and in these cases, the data storage requirements of STOPS or the execution times may become too large to be practical.

In these circumstances, STOPS can be configured to process only a portion of a metropolitan area. This is done by opening the ESRI shape file for each state in a metropolitan area[32] with a GIS application and coding an "XX" in the LSAD field for any zone which should be completely excluded from the STOPS analysis. In some cases, the user may not wish to completely exclude a zone since it serves as a destination for the corridor being modeled. This could happen if STOPS is being used to simulate a suburb-to-central city service and doesn't include calibration information or GTFS schedules for the central transit service. In this case, the user can code "YY" in the LSAD field. These zones will be included in the STOPS modeling region but trips between zones coded with "YY" will not be modeled. These adjustments should be coded prior to running Step 7.

This action can dramatically reduce file sizes and program execution times. If a metropolitan area has 4,000 zones within 25 miles of a fixed guideway station but only 2,000 zones have a noticeable impact on a particular project, then it is possible that file sizes and execution times might be ¼ of file sizes and running times for the full region. This factor presumes that transit services are generally available in all 4,000 zones and that these zones had population, employment and trips in the Year 2000 Census—actual results could show less of an improvement if many of the eliminated zones are empty or are located in areas without transit.

Dropping zones also complicates the process of defining regional unlinked trips (part of the calibration process). Since the exact number of unlinked trips may not be known for the modeled geography, some trial and error may be required to determine the proper value of this input variable. The trial and error process would entail running STOPS with a regional estimate of unlinked trips and then examining station and route-level ridership in the area of the project and then updating the unlinked trip estimate upward or downward until volumes are properly aligned.

[32] Files named tzXX_d00_shp.zip (projects with a TZ geography type), bgXX_d00_shp.zip (projects with a BG geography type), or trXX_d00_shp.zip (projects with a TR geography type) where XX is the state FIPS numeric code.

8.2 Bus Projects

STOPS is designed to estimate fixed guideway transit trips on a project. As mentioned above, fixed guideway projects (including BRT projects) are generally assumed to involve a series of well-defined stations and the service is perceived as being substantially different from local bus service. In these cases, STOPS users are encouraged to code BRT projects as type 0 (streetcar) to reflect the fact that the BRT is likely to be perceived as being more reliable or faster than conventional bus.

Some BRT projects, however, might not have sufficient differentiation to warrant treatment as a separate type of transit. All STOPS forecasts of project ridership or station-to-station flows show volumes traveling between stops for all transit service types (bus and fixed guideway) not just fixed guideway movements as long as "stations" are defined (with a Newstation flag set to "1") that represent the bus project. This has several important implications for analysis of bus projects:

- If existing bus routes serve BRT stations that are with Newstation=1, then existing bus ridership on conventional routes that board, alight or pass through these stations will be reported as being project riders. Consult with FTA staff to determine if this designation is warranted.
- A BRT project can be coded as bus (Type 3). Since these routes are included in the bus skims, this will result in ridership forecasts based solely on the performance of the BRT routes as a faster or more frequent version of a local bus rather and exclude any impact of the BRT as a separate service. The treatment may be most appropriate for cases where the BRT service offers well defined stations but does not offer a recognizable right-of-way or other features associated with a fixed guideway service.

9. Appendices

9.1 State FIPS Codes

Table 2. State FIPS Codes

State Name	Numeric FIPS Code	Alpha FIPS Code
Alabama	1	AL
Alaska	2	AK
Arizona	4	AZ
Arkansas	5	AR
California	6	CA
Colorado	8	CO
Connecticut	9	CT
Delaware	10	DE
District of Columbia	11	DC
Florida	12	FL
Georgia	13	GA
Hawaii	15	HI
Idaho	16	ID
Illinois	17	IL
Indiana	18	IN
Iowa	19	IA
Kansas	20	KS
Kentucky	21	KY
Louisiana	22	LA
Maine	23	ME
Maryland	24	MD
Massachusetts	25	MA
Michigan	26	MI
Minnesota	27	MN

State Name	Numeric FIPS Code	Alpha FIPS Code
Missouri	29	MO
Montana	30	MT
Nebraska	31	NE
Nevada	32	NV
New Hampshire	33	NH
New Jersey	34	NJ
New Mexico	35	NM
New York	36	NY
North Carolina	37	NC
North Dakota	38	ND
Ohio	39	OH
Oklahoma	40	OK
Oregon	41	OR
Pennsylvania	42	PA
Rhode Island	44	RI
South Carolina	45	SC
South Dakota	46	SD
Tennessee	47	TN
Texas	48	TX
Utah	49	UT
Vermont	50	VT
Virginia	51	VA
Washington	53	WA
West Virginia	54	WV

State Name	Numeric FIPS Code	Alpha FIPS Code
Mississippi	28	MS

State Name	Numeric FIPS Code	Alpha FIPS Code
Wisconsin	55	WI
Wyoming	56	WY

9.2 Census MPO Codes

MPO Code	MPO Name	Area Name
0581	Auburn-Opelika	Auburn-Opelika, AL
1001	Birmingham RPC	Birmingham, AL
0451	Calhoun Area MPO	Anniston, AL
2881	Gadsden-Etowah MPO	Gadsden, AL
3441	Huntsville MPO	Huntsville, AL
5241	Montgomery Division of Planning	Montgomery, AL
2031	North-Central Alabama Regional COG	Decatur, AL
2651	Northwest Alabama COG	Florence, AL
5161	South Alabama RPC	Mobile, AL
2181	Southeast Wiregrass MPO	Dothan, AL
8601	West Alabama PDC	Tuscaloosa, AL
0381	Anchorage MATS	Anchorage, AK
2461	Fairbanks MATS	Fairbanks, AK
2621	Flagstaff MPO	Flagstaff, AZ
6201	Maricopa Association of Governments	Phoenix-Mesa, AZ
8521	Pima Association of Governments	Tucson, AZ
9361	Yuma MPO	Yuma, AZ
3341	Hot Springs MPO	Hot Springs, AR
3701	Jonesboro MPO	Jonesboro, AR
4401	Metroplan	Little Rock-North Little Rock, AR
2581	Northwest AR Regional Planning Commission	Fayetteville-Springdale-Rogers, AR
6241	Southeast AR Regional Planning Commission	Pine Bluff, AR
8951	West Memphis Area Transportation Study	West Memphis, AR
2721	Western Arkansas PDD	Fort Smith, AR-OK
7121	Association of Monterey Bay Area Governments	Salinas, CA
1621	Butte County Association of Governments	Chico-Paradise, CA
2841	Council of Fresno County Governments	Fresno, CA
0681	Kern County Council of Governments	Bakersfield, CA
4941	Merced County Association of Governments	Merced, CA
7361	Metropolitan Transportation Commission-Oakland	San Francisco-Oakland-San Jose, CA
6921	Sacramento Area COG	Sacramento-Yolo, CA
7321	San Diego Association of Governments	San Diego, CA
8121	San Joaquin County COG	Stockton-Lodi, CA

MPO Code	MPO Name	Area Name
7461	San Luis Obispo Council of Governments	San Luis Obispo-Atascadero-Paso Robles, CA
7481	Santa Barbara County Association of Governments	Santa Barbara-Santa Maria-Lompoc, CA
6691	Shasta County RTPA	Redding, CA
4471	Southern CA Association of Governments	Los Angeles-Riverside-Orange County, CA
5171	Stanislaus council of Governments	Modesto, CA
8781	Tulare County Association of Governments	Visalia-Tulare-Porterville, CA
2081	Denver Regional COG	Denver-Boulder-Greeley, CO
2996	Grand Valley MPO	Grand Junction, CO
2671	North Front Range MPO	Fort Collins-Loveland, CO
1721	Pikes Peak Area COG	Colorado Springs, CO
6561	Pueblo Area Council of Governments	Pueblo, CO
0910	Capitol Region COG	Hartford, CT
0909	Central Connecticut RPA	Brisol, CT
0905	Central Naugatuck Valley COG	Waterbury, CT
0912	Connecticut River Estuary RPA	Old Saybrook, CT
0907	Greater Bridgeport / Valley MPO	Bridgeport, CT
0902	Housatonic Valley Council of Elected Officials	Danbury, CT
0904	Litchfield Hills Council of Elected Officials	Torrington, CT
0911	Midstate Regional Planning Agency	Middletown, CT
0915	Northeastern Connecticut COG	Putnam, CT
0903	Northwestern Connecticut COG	Warren, CT
0908	South Central Region COG	New Haven, CT
0901	South Western Regional Planning Agency	Stamford-Norwalk, CT
0913	Southeastern Connecticut COG	New London-Norwich, CT
0906	Valley Regional Planning Agency	Derby-Shelton, CT
0914	Windham Regional Planning Agency	Willimantic, CT
2191	Dover/Kent County MPO	Dover, DE
9161	Wilmington Area Planning Council	Wilmington-Newark, DE-MD
8841	Metropolitan Washington COG	Washington, DC-MD-VA
4901	Brevard County MPO	Melbourne-Titusville-Palm Bay, FL
2681	Broward County MPO	Fort Lauderdale, FL
6581	Charlotte County - Punta Gorda MPO	Punta Gorda, FL
5346	Collier County MPO	Naples, FL
8281	District 7 FDOT	Tampa-St. Petersburg-Clearwater, FL
3601	First Coast MPO	Jacksonville, FL
2751	Okaloosa-Walton TPO	Fort Walton Beach, FL
2901	Gainesville Urbanized Area MPO	Gainesville, FL
8701	Indian River County MPO	Vero Beach, FL
2701	Lee County MPO	Fort Myers-Cape Coral, FL
8131	Martin County MPO	Stuart, FL

MPO Code	MPO Name	Area Name
5961	Metroplan Orlando	Orlando, FL
5001	Miami-Dade Metropolitan Planning Organization	Miami, FL
5791	Ocala-Marion County MPO	Ocala, FL
8961	Palm Beach County MPO	West Palm Beach-Boca Raton, FL
6016	Panama City MPO	Panama City, FL
6081	Pensacola MPO	Pensacola, FL
3981	Polk Transportation Planning Organization	Lakeland-Winter Haven, FL
7511	Sarasota-Manatee MPO	Sarasota-Bradenton, FL
2711	St. Lucie MPO	Fort Pierce-Port St. Lucie, FL
8241	Tallahassee-Leon County MPO	Tallahassee, FL
2021	Volusia County MPO	Daytona Beach, FL
0121	Albany Dougherty County Planning Commission	Albany, GA
0501	Athens-Clarke County MPO	Athens, GA
0521	Atlanta Regional Commission	Atlanta, GA
0601	Augusta Richmond County PC	Augusta-Aiken, GA-SC
7521	Chatham County-Savannah Metropolitan Planning Comm.	Savannah, GA
1801	Columbus-Phenix City Transportation Study	Columbus, GA-AL
1251	Brunswick Area Transportation Study	Brunswick GA
4681	Macon Area Transportation Study	Macon, GA
6911	Rome-Floyd County Planning Commission	Rome, GA
8821	Warner Robins MPO	Warner Robins, GA
3321	Oahu Metropolitan Planning Organization	Honolulu, HI
6341	Bannock Planning Organization	Pocatello, ID
3461	Bonneville MPO	Idaho Falls,ID
1081	Community Planning Association of Southwest Idaho	Boise City, ID
1961	Bi-State Regional Commission	Davenport-Moline-Rock Island, IA-IL
1401	Champaign County RPC	Champaign-Urbana, IL
1601	Chicago Area Transportation Study	Chicago, IL
3741	Kankakee County RPC	Kankakee, IL
2041	Macon County RPC	Decatur, IL
1041	McLean County RPC	Bloomington-Normal, IL
6881	Rockford Area Transportation Study	Rockford, IL
7881	Springfield-Sangamon County RPC	Springfield, IL
6121	Tri-County Regional Planning Commission--IL	Peoria-Pekin, IL
3921	Tippecanoe County Area Planning Commission	Lafayette, IN
1021	Bloomington Area Transportation Study	Bloomington-Normal, IN
5281	Delaware-Muncie MPC	Muncie, IN
2441	Evansville Urban Transportation Study	Evansville-Henderson, IN-KY
3481	Indianapolis MPO	Indianapolis, IN
3851	Kokomo-Howard County Governmental Coordinating	Kokomo, IN

MPO Code	MPO Name	Area Name
	Council	
0401	Madison County COG	Anderson, IN
7801	Michiana Area Council of Governments	South Bend, IN
2761	Northeastern Indiana Reg. Coordinating Council	Fort Wayne, IN
2961	Northwestern Indiana RPC	Gary, IN
8321	West Central Indiana Economic Development District	Terre Haute, IN
8921	Black Hawk Metropolitan Area Transportation Policy Board	Waterloo-Cedar Falls, IA
2121	Des Moines Area MPO	Des Moines, IA
2201	Dubuque Metropolitan Area Transportation Study	Dubuque, IA
3501	Johnson County COG	Iowa City, IA
1361	Linn County Reg. Planning Commission	Cedar Rapids, IA
7721	Siouxland Interstate Metropolitan Planning Council	Sioux City, IA-NE
4151	Lawrence-Douglas MPO	Lawrence, KS
8441	Topeka-Shawnee County MPO	Topeka, KS
9041	Wichita-Sedgewick County MPO	Wichita, KS
1141	Bowling Green-Warren County	Bowling Green, KY
3411	Ashland Urbanized Area	Ashland, KY
5991	Green River Area Development District	Owensboro, KY
4521	Kentuckiana Reg. Planning and Development Agency	Louisville, KY-IN
4281	Lexington-Fayette Urban County Government	Lexington, KY
0761	Capital Region Planning Commission	Baton Rouge, LA
3961	Imperial Calcasieu Regional Planning & Dev. Commission	Lake Charles, LA
3881	Lafayette City - Parish Consolidated Government	Lafayette, LA
5561	New Orleans RPC	New Orleans, LA
7681	Northwest Louisiana COG	Shreveport-Bossier City, LA
5201	Ouachita Council of Governments	Monroe, LA
0221	Rapides Area Planning Commission	Alexandria, LA
3351	Houma-Thibodaux MPO	Houma, LA
4241	Androscoggin Transportation Resource Center	Lewiston-Auburn, ME
0731	Bangor Area Comprehensive Transportation System	Bangor, ME
6401	Greater Portland COG	Portland, ME
7471	Southern Maine RPC	Sanford, ME
0721	Baltimore Metropolitan Council	Baltimore, MD
1901	Cumberland Urbanized Area	Cumberland, MD-WV
3181	Hagerstown-Eastern Panhandle MPO	Hagerstown, MD
6321	Berkshire County Regional Planning Commission	Pittsfield, MA
1121	Boston MPO	Boston, MA
0741	Cape Cod Commission	Barnstable-Yarmouth, MA
9241	Central Massachusetts RPC	Worcester, MA
1126	Central Transportation Planning	Boston metro, MA

MPO Code	MPO Name	Area Name
3101	Franklin Regional COG	Greenfield, MA
4861	Marthas Vineyard Commission	Martha's Vineyard, MA
4161	Merrimack Valley Planning Commission	Lawrence, MA
2601	Montachusett RPC	Fitchburg-Leominster, MA
5301	Nantucket Planning and Economic Devp. Commission	Nantucket, MA
4561	Northern Middlesex COG	Lowell, MA
1201	Old Colony Planning Council	Brockton, MA
8001	Pioneer Valley Planning Commission	Springfield, MA
2481	Southeastern Regional Planning and Economic Dev.	Fall River, MA
0781	Battle Creek Area Transportation Study	Battle Creek, MI
0801	Bay City Area Transportation Study	Bay City, MI
2641	Genesse County MPO	Flint, MI
3001	Grand Valley Metropolitan Council	Grand Rapids, MI
3721	Kalamazoo Area Transportation Study	Kalamazoo, MI
3311	Macatawa Area Coordinating Council	Holland, MI
3521	Region 2 Planning Commission	Jackson, MI
6961	Saginaw Co Metro Planning Commission	Saginaw-Bay City-Midland, MI
2161	Southeast Michigan COG	Detroit-Ann Arbor, MI
0871	Southwestern Michigan Commission	Benton Harbor, MI
4041	Tri-County RPC--MI	Lansing-East Lansing, MI
5291	West Michigan Shoreline RDC	Muskegon, MI
2241	Arrowhead Regional Development Commission	Duluth-Superior, MN-WI
5121	Metropolitan Council of the Twin Cities Area	Minneapolis-St. Paul, MN-WI
6821	Rochester-Olmsted COG	Rochester, MN
6981	St. Cloud Area Planning Organization	St. Cloud, MN
3561	Central Mississippi Planning and Development District	Jackson, MS
0921	Gulf Regional Planning Commission	Biloxi-Gulfport-Pascagoula, MS
3286	Hattiesburg-Petal-Forrest-Lamar MPO	Hattiesburg, MS
1741	Columbia Area Transportation Study	Columbia, MO
7041	East-West Gateway Coordinating Council	St. Louis, MO-IL
3711	Joplin Area Transportation Study Organization	Joplin, MO
3761	Mid-America Regional Council	Kansas City, MO-KS
7921	Springfield Area Transportation Study Org.	Springfield, MO
7001	St. Joseph Area Transportation Study Organization	St. Joseph, MO
3041	Great Falls City-County Planning Board	Great Falls, MT
5141	Missoula Transportation Policy Coordinating Commit	Missoula, MT
0881	Yellowstone County Board of Planning	Billings, MT
4361	Lincoln-Lancaster MPO	Lincoln, NE
5921	Omaha-Council Bluffs Metro Area Planning Agency	Omaha, NE-IA
4121	Southern Nevada RTC	Las Vegas, NV-AZ

MPO Code	MPO Name	Area Name
9371	Tahoe MPO	Zephyr Cove, NV
6721	Washoe County RTC	Reno, NV
5351	Nashua Regional Planning Commission	Nashua, NH
7061	Salem/Plaistow MPO	Salem, NH
6451	Sea Coast MPO	Portsmouth-Rochester, NH-ME
4761	Southern NH Planning Commission	Manchester, NH
5641	North Jersey Transportation Planning Authority	Newark, NJ
0561	South Jersey Transportation Planning Organization	Atlantic-Cape May, NJ
4101	Las Cruces MPO	Las Cruces, NM
0201	Mid Region MPO	Albuquerque, NM
7491	Santa Fe MPO	Santa Fe, NM
2976	Adirondack-Glens Falls Transportation Council	Glens Falls, NY
0961	Binghamton Metropolitan Transportation Study	Binghamton, NY
0161	Capital District Transportation Committee	Albany-Schenectady-Troy, NY
2336	Elmira-Chemung Transportation Committee	Elmira, NY
6841	Genesee Transportation Council	Rochester, NY
1281	Greater Buffalo Niagara Transportation Commission	Buffalo-Niagara Falls, NY
8681	Herkimer-Oneida Counties Transportation Study	Utica-Rome, NY
3511	Ithaca-Tompkins County Transportation Council	Ithaca, NY
3836	Kingston MPO	Kingston, NY
5601	New York Metropolitan Transportation Council	New York, NY
5661	Newburgh/Orange County Transportation Council	Newburgh, NY-PA
2281	Poughkeepsie-Dutchess County Transportation Council	Dutchess County, NY
8161	Syracuse Metropolitan Transportation Council	Syracuse, NY
0481	Asheville Urban Area MPO	Asheville, NC
3111	Burlington-Graham MPO	Burlington, NC
1861	Cabarrus-South Rowan MPO	Concord, NC
6641	Capital Area MPO	Raleigh, NC
3606	City of Jacksonville	Jacksonville, NC
2261	Durham-Chapel Hill-Carrboro MPO	Durham-Chapel Hill, NC
2561	Fayetteville Area Metropolitan Planning Organization	Fayetteville, NC
2966	Gaston Urban Area MPO	Gastonia, NC
2981	Goldsboro Urbanized Area MPO	Goldsboro, NC
3121	Greensboro Urban Area MPO	Greensboro, NC
3151	Greenville Urban Area MPO	Greenville, NC
3291	Hickory-Newton-Conover MPO	Hickory-Morganton-Lenoir, NC
1521	Mecklenburg-Union MPO	Charlotte, NC
6896	Rocky Mount Urban Area MPO	Rocky Mount, NC
3301	High Point Urban Area MPO	High Point, NC
9181	Wilmington Urban Area MPO	Wilmington, NC

MPO Code	MPO Name	Area Name
9201	Winston Salem/Forsyth County MPO	Winston-Salem, NC
1011	Bismarck-Mandan MPO	Bismarck, ND
2521	Fargo-Moorhead Metropolitan COG	Fargo-Moorhead, ND-MN
2986	Grand Forks-East Grand Forks MPO	Grand Forks, ND-MN
0081	Akron Metropolitan Area Transportation Study	Akron, OH
8081	Brooke-Hancock-Jefferson Metropolitan Planning Com	Steubenville-Weirton, OH-WV
8011	Clark County-Springfield Transportation Coordinating Committee	Springfield, OH
9321	Eastgate Regional COG	Youngstown-Warren, OH
5651	Licking County Area Transportation Study	Newark, OH
4321	Lima-Allen County RPC	Lima, OH
2001	Miami Valley Regional Planning Commission	Dayton, OH
1841	Mid-Ohio RPC	Columbus, OH
1681	Northeast Ohio Areawide Coordinating Agency	Cleveland, OH
1641	Ohio-Kentucky-Indiana Regional COG	Cincinnati-Hamilton, OH-KY-IN
4801	Richland County RPC	Mansfield, OH
1321	Stark County Area Transportation Study	Canton-Massillon, OH
8401	Toledo Metropolitan Area COG	Toledo, OH
5881	Association of Central Oklahoma Governments	Oklahoma City, OK
8561	Indian Nations COG	Tulsa, OK
4201	Lawton Metropolitan Area PC	Lawton, OK
2401	Lane Council of Governments	Eugene-Springfield, OR
6441	Metro	Portland, OR
7081	Salem Keizer Area Transportation Study	Salem, OR
4991	Rogue Valley COG	Medford-Ashland, OR
0281	Blair County Planning Commission	Altoona, PA
3681	Cambria County Planning Commission	Johnstown, PA
8051	Centre Region MPO	State College, PA
6161	Delaware Valley Regional Planning Commission	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD
2361	Erie MPO	Erie, PA
7561	Lackawanna-Luzerne Transportation Study	Scranton--Wilkes-Barre--Hazleton, PA
4001	Lancaster County Transportation Coordinating Committee	Lancaster, PA
5401	Lawrence County Planning Department	New Castle, PA
0241	Lehigh Valley Transportation Study	Allentown-Bethlehem-Easton, PA
9141	Lycoming County Planning Commission	Williamsport, PA
7611	Shenango Valley Area Transportation Study	Sharon, PA
6681	Reading Area Transportation Study	Reading, PA
6281	Southwestern Pennsylvania Commission	Pittsburgh, PA
3241	Harrisburg Area Transportation Study	Harrisburg-Lebanon-Carlisle, PA
9281	York County Planning Commission	York, PA

MPO Code	MPO Name	Area Name
6481	RI Statewide Planning Program	Providence, RI
0406	Anderson MPO	Anderson, SC
1761	Central Midlands COG	Columbia, SC
1441	Charleston Area Transportation Study	Charleston, SC
2656	Florence Area Transportation Study	Florence, SC
3161	Greenville Area Transportation Study	Greenville, SC
6861	Rock Hill-Fort Mill Area Trans. Study Policy	Rock Hill, SC
7821	Spartanburg Area Transportation Study	Spartanburg, SC
8141	Sumter Area Transportation Study	Sumter, SC
2971	Waccamaw RPC	Georgetown, SC
6661	Rapid City Area MPO	Rapid City, SD
7761	Sioux Falls MPO	Sioux Falls, SD
1161	Bristol Urban Area MPO	Bristol, TN
1561	Chattanooga Urban Area MPO	Chattanooga, TN-GA
1661	Clarksville Urban Area MPO	Clarksville-Hopkinsville, TN-KY
3581	Jackson MPO	Jackson, TN
3661	Johnson City MPO	Johnson City, TN
3831	Kingsport Urban Area MPO	Kingsport, TN
3841	Knoxville MPO	Knoxville, TN
4921	Memphis MPO	Memphis, TN-AR-MS
5361	Nashville Area MPO	Nashville, TN
0041	Abilene MPO	Abilene, TX
0321	Amarillo MPO	Amarillo, TX
1241	Brownsville MPO	Brownsville, TX
1261	Bryan-College Station MPO	Bryan-College Station, TX
0641	Capital Area MPO	Austin-San Marcos, TX
1881	Corpus Christi MPO	Corpus Christi, TX
2321	El Paso MPO	El Paso, TX
3201	Harlingen-San Benito MPO	Harlingen-San Benito, TX
4881	Hidalgo County MPO	McAllen-Edinburg-Mission, TX
3361	Houston-Galveston Area Council	Houston-Galveston, TX
3811	Killeen-Temple Urban Transportation Study	Killeen-Temple, TX
4081	Laredo Urban Transportation Study	Laredo, TX
4421	Longview MPO	Longview-Marshall, TX
4601	Lubbock MPO	Lubbock, TX
1921	North Central Texas COG	Dallas-Fort Worth, TX
5801	Permian Basin RPC	Odessa-Midland, TX
7201	San Angelo MPO	San Angelo, TX
7241	San Antonio-Bexar County MPO	San Antonio, TX
0841	South East Texas Regional Planning Commission	Beaumont-Port Arthur, TX

MPO Code	MPO Name	Area Name
7641	Sherman Denison MPO	Sherman-Denison, TX
8641	Tyler MPO	Tyler, TX
8751	Victoria MPO	Victoria, TX
8801	Waco MPO	Waco, TX
9081	Wichita Falls MPO	Wichita Falls, TX
8361	Texarkana MPO	Texarkana, TX-Texarkana, AR
4411	Cache MPO	Logan, UT
6971	Dixie MPO	St George, UT
6521	Mountainland Association of Governments	Provo-Orem, UT
7161	Wasatch Front Regional Council	Salt Lake City-Ogden, UT
1306	Chittenden County MPO	Burlington, VT
6141	Crater Planning District Commission	Petersburg, VA
5721	Hampton Roads Planning District Commission	Norfolk-Virginia Beach-Newport News, VA-NC
2801	Fredericksburg Area MPO	Fredericksburg, VA
4641	Central Virginia MPO	Lynchburg, VA
6761	Richmond Regional Planning District Commission	Richmond, VA
6801	Roanoke Valley Area MPO	Roanoke, VA
1541	Thomas Jefferson Planning District Commission	Charlottesville, VA
1951	West Piedmont Planning District Commission	Danville, VA
6741	Benton-Franklin COG	Richland-Kennewick-Pasco, WA
4416	Longview-Kelso-Rainier MPO	Longview, WA
7601	Puget Sound Regional Council	Seattle-Tacoma-Bremerton, WA
5261	Skagit COG	Mount Vernon, WA
8691	Southwest Washington Regional Transportation Council	Vancouver, WA
7841	Spokane Regional Transportation Council	Spokane, WA
5911	Thurston Regional Planning Council	Olympia, WA
8946	Wenatchee Valley Transportation Council	Wenatchee, WA
0861	Whatcom COG	Bellingham, WA
9261	Yakima Valley COG	Yakima, WA
9001	Bel-O-Mar Regional Council	Wheeling, WV-OH
3401	KYOVA Interstate Planning Commission	Huntington, WV
5251	Morgantown, WV MPO	Morgantown, WV
1481	Regional Intergovernmental Council	Charleston, WV
6021	WWW Interstate Planning Commission	Parkersburg-Marietta, WV-OH
3081	Bay-Lake Regional Planning Commission	Sheboygan, WI
3086	Brown County Planning Commission	Green Bay, WI
0461	East Central Wisconsin Regional Planning Commission	Appleton-Oshkosh-Neenah, WI
3621	Janesville Area Transportation Study	Janesville, WI
3871	La Crosse Area Planning Committee	La Crosse, WI-MN
4721	Madison Area MPO	Madison, WI

MPO Code	MPO Name	Area Name
8941	Marathon County Metro Planning Commission	Wausau, WI
5081	South East Wisconsin Regional Planning Commission	Milwaukee-Racine, WI
0866	Stateline Area Transportation Study	Beloit, WI
2291	West Central Wisconsin RPC	Eau Claire, WI
1351	Casper Area Transportation Planning Process	Casper, WY
1581	Cheyenne Area Transportation Planning Process	Cheyenne, WY

9.3 MPO Geography Types by County

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Alabama	01081		Auburn-Opelika	0581	TAZ
Alabama	01073		Birmingham RPC	1001	TAZ
Alabama	01117		Birmingham RPC	1001	TAZ
Alabama	01015		Calhoun Area MPO	0451	TAZ
Alabama	01121		Calhoun Area MPO	0451	TAZ
Alabama	01081		Columbus-Phenix City Transportation Study	1801	TAZ
Alabama	01113		Columbus-Phenix City Transportation Study	1801	TAZ
Alabama	01015		Gadsen-Etowah MPO	2881	BG
Alabama	01055		Gadsen-Etowah MPO	2881	BG
Alabama	01083		Huntsville MPO	3441	BG
Alabama	01089		Huntsville MPO	3441	TAZ
Alabama	01001		Montgomery Division of Planning	5241	BG
Alabama	01051		Montgomery Division of Planning	5241	BG
Alabama	01101		Montgomery Division of Planning	5241	BG
Alabama	01043		North Central Alabama Regional COG	2031	BG
Alabama	01079		North Central Alabama Regional COG	2031	BG
Alabama	01083		North Central Alabama Regional COG	2031	TAZ
Alabama	01103		North Central Alabama Regional COG	2031	TAZ
Alabama	01033		Northwest Alabama COG	2651	TAZ
Alabama	01077		Northwest Alabama COG	2651	TAZ
Alabama	01097		South Alabama RPC	5161	TAZ
Alabama	01045		Southeast Wiregrass Area MPO	2181	TAZ
Alabama	01067		Southeast Wiregrass Area MPO	2181	TAZ
Alabama	01069		Southeast Wiregrass Area MPO	2181	TAZ
Alabama	01125		West Alabama PDC	8601	TAZ
Alaska	02020		Anchorage MATS	0381	TAZ
Alaska	02090		Fairbanks MATS	2461	BG
Arizona	04005		Flagstaff MPO	2621	BG
Arizona	04013		Maricopa Assn. Of Gov.	6201	TAZ
Arizona	04021		Maricopa Assn. Of Gov.	6201	TAZ
Arizona	04025		Maricopa Assn. Of Gov.	6201	TAZ
Arizona	04019		Pima Assn. Of Gov.	8521	TAZ
Arizona	04021		Pima Assn. Of Gov.	8521	TAZ
Arizona	04027		Yuma MPO	9361	Tract
Arkansas	05051		Hot Springs MPO	3341	BG
Arkansas	05059		Hot Springs MPO	3341	BG
Arkansas	05031		Jonesboro MPO	3701	BG
Arkansas	05023		Metroplan	4401	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Arkansas	05029		Metroplan	4401	BG
Arkansas	05045		Metroplan	4401	BG
Arkansas	05053		Metroplan	4401	BG
Arkansas	05059		Metroplan	4401	BG
Arkansas	05085		Metroplan	4401	BG
Arkansas	05105		Metroplan	4401	BG
Arkansas	05117		Metroplan	4401	BG
Arkansas	05119		Metroplan	4401	BG
Arkansas	05125		Metroplan	4401	BG
Arkansas	05141		Metroplan	4401	BG
Arkansas	05145		Metroplan	4401	BG
Arkansas	05007		Northwest Arkansas RPC	2581	BG
Arkansas	05015		Northwest Arkansas RPC	2581	BG
Arkansas	05087		Northwest Arkansas RPC	2581	BG
Arkansas	05143		Northwest Arkansas RPC	2581	BG
Arkansas	05025		Southeast Arkansas RPC	6241	BG
Arkansas	05069		Southeast Arkansas RPC	6241	BG
Arkansas	05091		Texarkana MPO	8361	TAZ
Arkansas	05035		West Memphis MPO	8951	BG
Arkansas	05033		Western Arkansas PDD	2721	TAZ
Arkansas	05131		Western Arkansas PDD	2721	TAZ
California	06001		Association of Monterey Bay Area Governments	7121	BG
California	06047		Association of Monterey Bay Area Governments	7121	BG
California	06053		Association of Monterey Bay Area Governments	7121	BG
California	06069		Association of Monterey Bay Area Governments	7121	BG
California	06079		Association of Monterey Bay Area Governments	7121	BG
California	06081		Association of Monterey Bay Area Governments	7121	BG
California	06085		Association of Monterey Bay Area Governments	7121	BG
California	06087		Association of Monterey Bay Area Governments	7121	BG
California	06007		Butte County Association of Governments	1621	TAZ
California	06019		Council of Fresno County Governments	2841	TAZ
California	06029		Kern County Council of Governments	0681	TAZ
California	06047		Merced County Association of Governments	4941	TAZ
California	06001		Metropolitan Transportation Commission-Oakland	7361	TAZ
California	06013		Metropolitan Transportation Commission-Oakland	7361	TAZ
California	06041		Metropolitan Transportation Commission-Oakland	7361	TAZ
California	06055		Metropolitan Transportation Commission-Oakland	7361	TAZ
California	06075		Metropolitan Transportation Commission-Oakland	7361	TAZ
California	06081		Metropolitan Transportation Commission-Oakland	7361	TAZ
California	06085		Metropolitan Transportation Commission-Oakland	7361	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
California	06095		Metropolitan Transportation Commission-Oakland	7361	TAZ
California	06097		Metropolitan Transportation Commission-Oakland	7361	TAZ
California	06017		Sacramento Area COG	6921	TAZ
California	06061		Sacramento Area COG	6921	TAZ
California	06067		Sacramento Area COG	6921	TAZ
California	06101		Sacramento Area COG	6921	TAZ
California	06113		Sacramento Area COG	6921	TAZ
California	06115		Sacramento Area COG	6921	TAZ
California	06073		San Diego Association of Governments	7321	TAZ
California	06077		San Joaquin County COG	8121	TAZ
California	06079		San Luis Obispo COG	7461	TAZ
California	06083		Santa Barbara County Association of Governments	7481	TAZ
California	06089		Shasta County RTPA	6691	BG
California	06025		Southern CA Association of Governments	4471	BG
California	06037		Southern CA Association of Governments	4471	BG
California	06059		Southern CA Association of Governments	4471	BG
California	06065		Southern CA Association of Governments	4471	BG
California	06071		Southern CA Association of Governments	4471	BG
California	06111		Southern CA Association of Governments	4471	BG
California	06099		Stanislaus COG	5171	TAZ
California	06017		Tahoe MPO	9371	BG
California	06061		Tahoe MPO	9371	BG
California	06019		Tulare County Association of Governments	8781	BG
California	06029		Tulare County Association of Governments	8781	BG
California	06031		Tulare County Association of Governments	8781	BG
California	06107		Tulare County Association of Governments	8781	BG
Colorado	08001		Denver Regional COG	2081	TAZ
Colorado	08005		Denver Regional COG	2081	TAZ
Colorado	08013		Denver Regional COG	2081	TAZ
Colorado	08019		Denver Regional COG	2081	TAZ
Colorado	08031		Denver Regional COG	2081	TAZ
Colorado	08035		Denver Regional COG	2081	TAZ
Colorado	08039		Denver Regional COG	2081	TAZ
Colorado	08047		Denver Regional COG	2081	TAZ
Colorado	08059		Denver Regional COG	2081	TAZ
Colorado	08093		Denver Regional COG	2081	BG
Colorado	08123		Denver Regional COG	2081	TAZ
Colorado	08077		Grand Valley MPO	2996	TAZ
Colorado	08013		North Front Range MPO	2671	BG
Colorado	08069		North Front Range MPO	2671	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Colorado	08123		North Front Range MPO	2671	BG
Colorado	08041		Pikes Peak Area COG	1721	TAZ
Colorado	08093		Pikes Peak Area COG	1721	BG
Colorado	08119		Pikes Peak Area COG	1721	BG
Colorado	08101		Pueblo Area Council of Governments	6561	TAZ
Connecticut	**New England states are shown at the end of this file**				
Delaware	10003		Delaware Valley RPC	6161	Tract
Delaware	10001		Dover/Kent Co MPO	2191	BG
Delaware	10005		Dover/Kent Co MPO	2191	BG
Delaware	10003		Wilmington Planning Council	9161	BG
Washington, DC	11001		Metropolitan Washington COG	8841	TAZ
Washington, DC	11001		Baltimore Metropolitan Council	0721	Tract
Florida	12009		Brevard MPO	4901	TAZ
Florida	12011		Broward County MPO	2681	TAZ
Florida	12015		Charlotte County-Punta Gorda MPO	6581	TAZ
Florida	12027		Charlotte County-Punta Gorda MPO	6581	Tract
Florida	12071		Charlotte County-Punta Gorda MPO	6581	TAZ
Florida	12115		Charlotte County-Punta Gorda MPO	6581	TAZ
Florida	12021		Collier County MPO	5346	BG
Florida	12017		District 7 FDOT	8281	TAZ
Florida	12053		District 7 FDOT	8281	TAZ
Florida	12057		District 7 FDOT	8281	TAZ
Florida	12081		District 7 FDOT	8281	TAZ
Florida	12083		District 7 FDOT	8281	TAZ
Florida	12101		District 7 FDOT	8281	TAZ
Florida	12103		District 7 FDOT	8281	TAZ
Florida	12105		District 7 FDOT	8281	TAZ
Florida	12031		First Coast MPO	3601	TAZ
Florida	12001		Gainesville Urbanized Area MPO	2901	TAZ
Florida	12061		Indian River County MPO	8701	TAZ
Florida	12015		Lee County MPO	2701	TAZ
Florida	12021		Lee County MPO	2701	TAZ
Florida	12071		Lee County MPO	2701	TAZ
Florida	12085		Martin County MPO	8131	BG
Florida	12111		Martin County MPO	8131	BG
Florida	12095		Metroplan Orlando	5961	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Florida	12097		Metroplan Orlando	5961	BG
Florida	12117		Metroplan Orlando	5961	BG
Florida	12086		Miami-Dade MPO	5001	BG
Florida	12083		Ocala-Marion County MPO	5791	TAZ
Florida	12091		Okaloosa-Walton TPO	2751	TAZ
Florida	12131		Okaloosa-Walton TPO	2751	TAZ
Florida	12099		Palm Beach County MPO	8961	TAZ
Florida	12005		Panama City MPO	6016	TAZ
Florida	12033		Pensacola MPO	6081	TAZ
Florida	12113		Pensacola MPO	6081	TAZ
Florida	12105		Polk TPO	3981	BG
Florida	12081		Sarasota-Manatee MPO	7511	TAZ
Florida	12115		Sarasota-Manatee MPO	7511	TAZ
Florida	12111		St. Lucie MPO	2711	BG
Florida	12073		Tallahassee-Leon County MPO	8241	TAZ
Florida	12035		Volusia County MPO	2021	BG
Florida	12127		Volusia County MPO	2021	BG
Georgia	13095		Albany Dougherty Regional Transportation Study	0121	TAZ
Georgia	13177		Albany Dougherty Regional Transportation Study	0121	TAZ
Georgia	13059		Athens Clarke Oconee Regional Transportation Study	0501	TAZ
Georgia	13195		Athens Clarke Oconee Regional Transportation Study	0501	Tract
Georgia	13219		Athens Clarke Oconee Regional Transportation Study	0501	TAZ
Georgia	13013		Atlanta Regional Commission	0521	BG
Georgia	13015		Atlanta Regional Commission	0521	TAZ
Georgia	13035		Atlanta Regional Commission	0521	BG
Georgia	13045		Atlanta Regional Commission	0521	BG
Georgia	13057		Atlanta Regional Commission	0521	TAZ
Georgia	13063		Atlanta Regional Commission	0521	TAZ
Georgia	13067		Atlanta Regional Commission	0521	TAZ
Georgia	13077		Atlanta Regional Commission	0521	TAZ
Georgia	13085		Atlanta Regional Commission	0521	BG
Georgia	13089		Atlanta Regional Commission	0521	TAZ
Georgia	13097		Atlanta Regional Commission	0521	TAZ
Georgia	13113		Atlanta Regional Commission	0521	TAZ
Georgia	13117		Atlanta Regional Commission	0521	TAZ
Georgia	13121		Atlanta Regional Commission	0521	TAZ
Georgia	13135		Atlanta Regional Commission	0521	TAZ
Georgia	13139		Atlanta Regional Commission	0521	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Georgia	13143		Atlanta Regional Commission	0521	Tract
Georgia	13149		Atlanta Regional Commission	0521	Tract
Georgia	13151		Atlanta Regional Commission	0521	TAZ
Georgia	13157		Atlanta Regional Commission	0521	BG
Georgia	13159		Atlanta Regional Commission	0521	Tract
Georgia	13171		Atlanta Regional Commission	0521	Tract
Georgia	13199		Atlanta Regional Commission	0521	Tract
Georgia	13217		Atlanta Regional Commission	0521	BG
Georgia	13223		Atlanta Regional Commission	0521	TAZ
Georgia	13227		Atlanta Regional Commission	0521	BG
Georgia	13231		Atlanta Regional Commission	0521	Tract
Georgia	13233		Atlanta Regional Commission	0521	Tract
Georgia	13247		Atlanta Regional Commission	0521	TAZ
Georgia	13255		Atlanta Regional Commission	0521	BG
Georgia	13285		Atlanta Regional Commission	0521	Tract
Georgia	13293		Atlanta Regional Commission	0521	Tract
Georgia	13297		Atlanta Regional Commission	0521	BG
Georgia	13073		Augusta Richmond County PC	0601	TAZ
Georgia	13245		Augusta Richmond County PC	0601	TAZ
Georgia	13127		Brunswick Area Transportation Study	1251	BG
Georgia	13029		Chatham County-Savannah MPC	7521	BG
Georgia	13051		Chatham County-Savannah MPC	7521	TAZ
Georgia	13103		Chatham County-Savannah MPC	7521	BG
Georgia	13047		Chattanooga Urban Area MPO	1561	BG
Georgia	13083		Chattanooga Urban Area MPO	1561	BG
Georgia	13295		Chattanooga Urban Area MPO	1561	BG
Georgia	13215		Columbus-Phenix City Transportation Study	1801	TAZ
Georgia	13021		Macon Area Transportation Study	4681	TAZ
Georgia	13169		Macon Area Transportation Study	4681	TAZ
Georgia	13115		Rome-Floyd County PC	6911	BG
Georgia	13153		Warner Robins MPO	8821	TAZ
Georgia	13225		Warner Robins MPO	8821	TAZ
Hawaii	15003		Oahu MPO	3321	BG
Idaho	16005		Bannock Planning Organization	6341	BG
Idaho	16077		Bannock Planning Organization	6341	BG
Idaho	16019		Bonneville MPO	3461	TAZ
Idaho	16001		Community Planning Assoc. of Southwest Idaho	1081	TAZ
Idaho	16015		Community Planning Assoc. of Southwest Idaho	1081	Tract
Idaho	16027		Community Planning Assoc. of Southwest Idaho	1081	TAZ
Idaho	16039		Community Planning Assoc. of Southwest Idaho	1081	Tract

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Idaho	16045		Community Planning Assoc. of Southwest Idaho	1081	Tract
Idaho	16073		Community Planning Assoc. of Southwest Idaho	1081	Tract
Idaho	16075		Community Planning Assoc. of Southwest Idaho	1081	Tract
Idaho	16055		Spokane RTC	7841	BG
Illinois	17073		Bi-State Regional Commission	1961	TAZ
Illinois	17131		Bi-State Regional Commission	1961	TAZ
Illinois	17161		Bi-State Regional Commission	1961	TAZ
Illinois	17019		Champaign County RPC	1401	TAZ
Illinois	17007		Chicago Area Transportation Study	1601	TAZ
Illinois	17031		Chicago Area Transportation Study	1601	TAZ
Illinois	17037		Chicago Area Transportation Study	1601	Tract
Illinois	17043		Chicago Area Transportation Study	1601	TAZ
Illinois	17063		Chicago Area Transportation Study	1601	TAZ
Illinois	17089		Chicago Area Transportation Study	1601	TAZ
Illinois	17091		Chicago Area Transportation Study	1601	TAZ
Illinois	17093		Chicago Area Transportation Study	1601	TAZ
Illinois	17097		Chicago Area Transportation Study	1601	TAZ
Illinois	17099		Chicago Area Transportation Study	1601	Tract
Illinois	17111		Chicago Area Transportation Study	1601	TAZ
Illinois	17197		Chicago Area Transportation Study	1601	TAZ
Illinois	17201		Chicago Area Transportation Study	1601	TAZ
Illinois	17085		Dubuque MATS	2201	TAZ
Illinois	17119		East-West Gateway Coordinating Council	7041	TAZ
Illinois	17133		East-West Gateway Coordinating Council	7041	TAZ
Illinois	17163		East-West Gateway Coordinating Council	7041	TAZ
Illinois	17091		Kankakee County RPC	3741	TAZ
Illinois	17115		Macon County RPC	2041	BG
Illinois	17113		McLean County RPC	1041	TAZ
Illinois	17031		Northwestern Indiana RPC	2961	TAZ
Illinois	17037		Northwestern Indiana RPC	2961	TAZ
Illinois	17043		Northwestern Indiana RPC	2961	TAZ
Illinois	17063		Northwestern Indiana RPC	2961	TAZ
Illinois	17089		Northwestern Indiana RPC	2961	TAZ
Illinois	17091		Northwestern Indiana RPC	2961	TAZ
Illinois	17093		Northwestern Indiana RPC	2961	TAZ
Illinois	17097		Northwestern Indiana RPC	2961	TAZ
Illinois	17111		Northwestern Indiana RPC	2961	TAZ
Illinois	17197		Northwestern Indiana RPC	2961	TAZ
Illinois	17007		Rockford Area Transportation Study	6881	TAZ
Illinois	17037		Rockford Area Transportation Study	6881	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Illinois	17141		Rockford Area Transportation Study	6881	BG
Illinois	17177		Rockford Area Transportation Study	6881	BG
Illinois	17201		Rockford Area Transportation Study	6881	TAZ
Illinois	17167		Springfield-Sangamon County RPC	7881	TAZ
Illinois	17201		Stateline Area Transportation Study	0866	TAZ
Illinois	17143		Tri-County Regional Planning Commission	6121	TAZ
Illinois	17179		Tri-County Regional Planning Commission	6121	TAZ
Illinois	17203		Tri-County Regional Planning Commission	6121	TAZ
Indiana	18105		Bloomington Area Transportation Study	1021	BG
Indiana	18089		Chicago Area Transportation Study	1601	TAZ
Indiana	18127		Chicago Area Transportation Study	1601	TAZ
Indiana	18035		Delaware-Muncie MPC	5281	TAZ
Indiana	18135		Delaware-Muncie MPC	5281	BG
Indiana	18051		Evansville Urban Transportation Study	2441	TAZ
Indiana	18129		Evansville Urban Transportation Study	2441	TAZ
Indiana	18163		Evansville Urban Transportation Study	2441	TAZ
Indiana	18173		Evansville Urban Transportation Study	2441	TAZ
Indiana	18011		Indianapolis MPO	3481	TAZ
Indiana	18057		Indianapolis MPO	3481	TAZ
Indiana	18059		Indianapolis MPO	3481	TAZ
Indiana	18063		Indianapolis MPO	3481	TAZ
Indiana	18081		Indianapolis MPO	3481	TAZ
Indiana	18097		Indianapolis MPO	3481	TAZ
Indiana	18109		Indianapolis MPO	3481	TAZ
Indiana	18145		Indianapolis MPO	3481	TAZ
Indiana	18019		Kentuckiana Regional Planning and Development Agency	4521	TAZ
Indiana	18043		Kentuckiana Regional Planning and Development Agency	4521	TAZ
Indiana	18067		Kokomo-Howard County Governmental Coordinating Council	3851	TAZ
Indiana	18095		Madison County COG	0401	BG
Indiana	18039		Michiana Area COG	7801	TAZ
Indiana	18049		Michiana Area COG	7801	BG
Indiana	18085		Michiana Area COG	7801	TAZ
Indiana	18087		Michiana Area COG	7801	BG
Indiana	18091		Michiana Area COG	7801	TAZ
Indiana	18099		Michiana Area COG	7801	TAZ
Indiana	18113		Michiana Area COG	7801	TAZ
Indiana	18131		Michiana Area COG	7801	BG
Indiana	18141		Michiana Area COG	7801	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Indiana	18149		Michiana Area COG	7801	BG
Indiana	18169		Michiana Area COG	7801	BG
Indiana	18183		Michiana Area COG	7801	TAZ
Indiana	18001		Northeastern Indiana Reg. Coordinating Council	2761	TAZ
Indiana	18003		Northeastern Indiana Reg. Coordinating Council	2761	TAZ
Indiana	18033		Northeastern Indiana Reg. Coordinating Council	2761	TAZ
Indiana	18069		Northeastern Indiana Reg. Coordinating Council	2761	TAZ
Indiana	18113		Northeastern Indiana Reg. Coordinating Council	2761	TAZ
Indiana	18151		Northeastern Indiana Reg. Coordinating Council	2761	TAZ
Indiana	18179		Northeastern Indiana Reg. Coordinating Council	2761	TAZ
Indiana	18183		Northeastern Indiana Reg. Coordinating Council	2761	TAZ
Indiana	18089		Northwestern Indiana RPC	2961	TAZ
Indiana	18091		Northwestern Indiana RPC	2961	TAZ
Indiana	18127		Northwestern Indiana RPC	2961	TAZ
Indiana	18029		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Indiana	18115		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Indiana	18007		Tippecanoe County Area Planning Commission	3921	Tract
Indiana	18015		Tippecanoe County Area Planning Commission	3921	Tract
Indiana	18023		Tippecanoe County Area Planning Commission	3921	Tract
Indiana	18045		Tippecanoe County Area Planning Commission	3921	Tract
Indiana	18107		Tippecanoe County Area Planning Commission	3921	Tract
Indiana	18157		Tippecanoe County Area Planning Commission	3921	TAZ
Indiana	18171		Tippecanoe County Area Planning Commission	3921	Tract
Indiana	18181		Tippecanoe County Area Planning Commission	3921	Tract
Indiana	18167		West Central Indiana Economic Development District	8321	BG
Iowa	19139		Bi-State Regional Commission	1961	TAZ
Iowa	19163		Bi-State Regional Commission	1961	TAZ
Iowa	19013		Black Hawk Metropolitan Area Transp. Policy Board	8921	TAZ
Iowa	19017		Black Hawk Metropolitan Area Transp. Policy Board	8921	TAZ
Iowa	19019		Black Hawk Metropolitan Area Transp. Policy Board	8921	TAZ
Iowa	19023		Black Hawk Metropolitan Area Transp. Policy Board	8921	TAZ
Iowa	19037		Black Hawk Metropolitan Area Transp. Policy Board	8921	TAZ
Iowa	19075		Black Hawk Metropolitan Area Transp. Policy Board	8921	TAZ
Iowa	19015		Des Moines Area MPO	2121	BG
Iowa	19049		Des Moines Area MPO	2121	TAZ
Iowa	19099		Des Moines Area MPO	2121	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Iowa	19121		Des Moines Area MPO	2121	BG
Iowa	19125		Des Moines Area MPO	2121	BG
Iowa	19127		Des Moines Area MPO	2121	BG
Iowa	19153		Des Moines Area MPO	2121	TAZ
Iowa	19169		Des Moines Area MPO	2121	BG
Iowa	19181		Des Moines Area MPO	2121	TAZ
Iowa	19045		Dubuque MATS	2201	TAZ
Iowa	19055		Dubuque MATS	2201	TAZ
Iowa	19061		Dubuque MATS	2201	TAZ
Iowa	19097		Dubuque MATS	2201	TAZ
Iowa	19103		Johnson County COG	3501	TAZ
Iowa	19103		Linn County RPC	1361	TAZ
Iowa	19113		Linn County RPC	1361	TAZ
Iowa	19129		Omaha-Council Bluffs Metro Area Planning Agency	5921	BG
Iowa	19155		Omaha-Council Bluffs Metro Area Planning Agency	5921	TAZ
Iowa	19149		Siouxland Interstate MPC	7721	TAZ
Iowa	19193		Siouxland Interstate MPC	7721	TAZ
Kansas	20045		Lawrence/Douglas County MPO	4151	TAZ
Kansas	20045		Mid-America Regional Council	3761	TAZ
Kansas	20091		Mid-America Regional Council	3761	TAZ
Kansas	20103		Mid-America Regional Council	3761	TAZ
Kansas	20121		Mid-America Regional Council	3761	TAZ
Kansas	20209		Mid-America Regional Council	3761	TAZ
Kansas	20043		St. Joseph Area Transportation Study	7001	TAZ
Kansas	20177		Topeka-Shawnee County MPO	8441	BG
Kansas	20015		Wichita-Sedgwick County MPO	9041	BG
Kansas	20035		Wichita-Sedgwick County MPO	9041	BG
Kansas	20079		Wichita-Sedgwick County MPO	9041	BG
Kansas	20095		Wichita-Sedgwick County MPO	9041	BG
Kansas	20155		Wichita-Sedgwick County MPO	9041	BG
Kansas	20173		Wichita-Sedgwick County MPO	9041	BG
Kansas	20191		Wichita-Sedgwick County MPO	9041	BG
Kentucky	21019		Ashland Urbanized Area	3411	BG
Kentucky	21089		Ashland Urbanized Area	3411	BG
Kentucky	21227		Bowling Green-Warren County	1141	TAZ
Kentucky	21047		Clarksville Urban Area MPO	1661	BG
Kentucky	21101		Evansville Urban Transportation Study	2441	TAZ
Kentucky	21059		Green River Area Development District	5991	TAZ
Kentucky	21029		Kentuckiana Regional Planning and Development Agency	4521	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Kentucky	21111		Kentuckiana Regional Planning and Development Agency	4521	TAZ
Kentucky	21185		Kentuckiana Regional Planning and Development Agency	4521	TAZ
Kentucky	21067		Lexington Area MPO	4281	TAZ
Kentucky	21113		Lexington Area MPO	4281	TAZ
Kentucky	21015		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Kentucky	21037		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Kentucky	21077		Ohio-Kentucky-Indiana Regional COG	1641	BG
Kentucky	21081		Ohio-Kentucky-Indiana Regional COG	1641	BG
Kentucky	21117		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Kentucky	21191		Ohio-Kentucky-Indiana Regional COG	1641	BG
Louisiana	22005		Capital Region PC	0761	TAZ
Louisiana	22033		Capital Region PC	0761	TAZ
Louisiana	22047		Capital Region PC	0761	BG
Louisiana	22063		Capital Region PC	0761	TAZ
Louisiana	22121		Capital Region PC	0761	TAZ
Louisiana	22007		Houma-Thibodaux MPO	3351	BG
Louisiana	22051		Houma-Thibodaux MPO	3351	TAZ
Louisiana	22057		Houma-Thibodaux MPO	3351	BG
Louisiana	22089		Houma-Thibodaux MPO	3351	BG
Louisiana	22093		Houma-Thibodaux MPO	3351	BG
Louisiana	22095		Houma-Thibodaux MPO	3351	BG
Louisiana	22101		Houma-Thibodaux MPO	3351	BG
Louisiana	22109		Houma-Thibodaux MPO	3351	TAZ
Louisiana	22019		Imperial Calcasieu Regional Planning & Dev. Comm.	3961	TAZ
Louisiana	22001		Lafayette Consolidated Government	3881	BG
Louisiana	22045		Lafayette Consolidated Government	3881	BG
Louisiana	22055		Lafayette Consolidated Government	3881	TAZ
Louisiana	22097		Lafayette Consolidated Government	3881	BG
Louisiana	22099		Lafayette Consolidated Government	3881	BG
Louisiana	22113		Lafayette Consolidated Government	3881	BG
Louisiana	22051		New Orleans RPC	5561	TAZ
Louisiana	22071		New Orleans RPC	5561	TAZ
Louisiana	22075		New Orleans RPC	5561	TAZ
Louisiana	22087		New Orleans RPC	5561	TAZ
Louisiana	22089		New Orleans RPC	5561	TAZ
Louisiana	22093		New Orleans RPC	5561	BG
Louisiana	22095		New Orleans RPC	5561	BG
Louisiana	22103		New Orleans RPC	5561	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Louisiana	22015		Northwest Louisiana COG	7681	TAZ
Louisiana	22017		Northwest Louisiana COG	7681	TAZ
Louisiana	22073		Ouachita COG	5201	TAZ
Louisiana	22079		Rapides Area PC	0221	TAZ
Maine	**New England states are shown at the end of this file**				
Maryland	24003		Baltimore Metropolitan Council	0721	TAZ
Maryland	24005		Baltimore Metropolitan Council	0721	TAZ
Maryland	24013		Baltimore Metropolitan Council	0721	TAZ
Maryland	24015		Baltimore Metropolitan Council	0721	Tract
Maryland	24017		Baltimore Metropolitan Council	0721	Tract
Maryland	24021		Baltimore Metropolitan Council	0721	Tract
Maryland	24025		Baltimore Metropolitan Council	0721	TAZ
Maryland	24027		Baltimore Metropolitan Council	0721	TAZ
Maryland	24031		Baltimore Metropolitan Council	0721	Tract
Maryland	24033		Baltimore Metropolitan Council	0721	Tract
Maryland	24035		Baltimore Metropolitan Council	0721	Tract
Maryland	24510		Baltimore Metropolitan Council	0721	TAZ
Maryland	24001		Cumberland Urbanized Area	1901	BG
Maryland	24015		Delaware Valley RPC	6161	Tract
Maryland	24043		Hagerstown-Eastern Panhandle MPO	3181	TAZ
Maryland	24003		Metropolitan Washington COG	8841	TAZ
Maryland	24005		Metropolitan Washington COG	8841	TAZ
Maryland	24009		Metropolitan Washington COG	8841	TAZ
Maryland	24013		Metropolitan Washington COG	8841	TAZ
Maryland	24017		Metropolitan Washington COG	8841	TAZ
Maryland	24021		Metropolitan Washington COG	8841	TAZ
Maryland	24025		Metropolitan Washington COG	8841	TAZ
Maryland	24027		Metropolitan Washington COG	8841	TAZ
Maryland	24031		Metropolitan Washington COG	8841	TAZ
Maryland	24033		Metropolitan Washington COG	8841	TAZ
Maryland	24035		Metropolitan Washington COG	8841	TAZ
Maryland	24037		Metropolitan Washington COG	8841	TAZ
Maryland	24043		Metropolitan Washington COG	8841	TAZ
Maryland	24510		Metropolitan Washington COG	8841	TAZ
Maryland	24015		Wilmington Planning Council	9161	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	**New England states are shown at the end of this file**				
Michigan	26025		Battle Creek Area Transportation Study	0781	TAZ
Michigan	26017		Bay City Area Transportation Study	0801	TAZ
Michigan	26049		Genesee County MPO	2641	TAZ
Michigan	26087		Genesee County MPO	2641	TAZ
Michigan	26093		Genesee County MPO	2641	TAZ
Michigan	26125		Genesee County MPO	2641	TAZ
Michigan	26145		Genesee County MPO	2641	TAZ
Michigan	26155		Genesee County MPO	2641	TAZ
Michigan	26157		Genesee County MPO	2641	TAZ
Michigan	26081		Grand Valley Metro Council	3001	TAZ
Michigan	26139		Grand Valley Metro Council	3001	TAZ
Michigan	26005		Kalamazoo Area Transportation Study	3721	TAZ
Michigan	26015		Kalamazoo Area Transportation Study	3721	TAZ
Michigan	26025		Kalamazoo Area Transportation Study	3721	TAZ
Michigan	26077		Kalamazoo Area Transportation Study	3721	TAZ
Michigan	26081		Kalamazoo Area Transportation Study	3721	TAZ
Michigan	26159		Kalamazoo Area Transportation Study	3721	TAZ
Michigan	26005		Macatawa Area Coordinating Council	3311	TAZ
Michigan	26081		Macatawa Area Coordinating Council	3311	TAZ
Michigan	26121		Macatawa Area Coordinating Council	3311	TAZ
Michigan	26139		Macatawa Area Coordinating Council	3311	TAZ
Michigan	26021		Michiana Area COG	7801	TAZ
Michigan	26027		Michiana Area COG	7801	TAZ
Michigan	26059		Region 2 Planning Commission	3521	BG
Michigan	26075		Region 2 Planning Commission	3521	TAZ
Michigan	26091		Region 2 Planning Commission	3521	BG
Michigan	26017		Saginaw Metropolitan Area Transportation Study	6961	BG
Michigan	26049		Saginaw Metropolitan Area Transportation Study	6961	BG
Michigan	26057		Saginaw Metropolitan Area Transportation Study	6961	BG
Michigan	26111		Saginaw Metropolitan Area Transportation Study	6961	BG
Michigan	26145		Saginaw Metropolitan Area Transportation Study	6961	TAZ
Michigan	26155		Saginaw Metropolitan Area Transportation Study	6961	BG
Michigan	26157		Saginaw Metropolitan Area Transportation Study	6961	BG
Michigan	26093		Southeast Michigan COG	2161	TAZ
Michigan	26099		Southeast Michigan COG	2161	TAZ
Michigan	26115		Southeast Michigan COG	2161	TAZ

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Michigan	26125		Southeast Michigan COG	2161	TAZ
Michigan	26147		Southeast Michigan COG	2161	TAZ
Michigan	26161		Southeast Michigan COG	2161	TAZ
Michigan	26163		Southeast Michigan COG	2161	TAZ
Michigan	26021		Southwestern Michigan Commission	0871	BG
Michigan	26027		Southwestern Michigan Commission	0871	BG
Michigan	26159		Southwestern Michigan Commission	0871	BG
Michigan	26115		Toledo Metropolitan Area COG	8401	TAZ
Michigan	26037		Tri-County RPC	4041	TAZ
Michigan	26045		Tri-County RPC	4041	TAZ
Michigan	26065		Tri-County RPC	4041	TAZ
Michigan	26121		West Michigan Shoreline RDC	5291	TAZ
Michigan	26139		West Michigan Shoreline RDC	5291	TAZ
Minnesota	27137		Arrowhead RDC	2241	TAZ
Minnesota	27027		Fargo-Moorhead Metropolitan COG	2521	TAZ
Minnesota	27119		Grand Forks-East Grand Forks MPO	2986	TAZ
Minnesota	27055		La Crosse Area Planning Committee	3871	TAZ
Minnesota	27169		La Crosse Area Planning Committee	3871	TAZ
Minnesota	27003		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27019		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27025		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27037		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27049		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27053		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27059		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27079		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27085		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27095		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27123		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27131		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27139		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27141		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27143		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27163		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27171		Metropolitan Council of the Twin Cities Area	5121	TAZ
Minnesota	27109		Rochester-Olmsted COG	6821	TAZ
Minnesota	27009		St. Cloud Area Planning Organization	6981	BG
Minnesota	27141		St. Cloud Area Planning Organization	6981	BG
Minnesota	27145		St. Cloud Area Planning Organization	6981	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Mississippi	28049		Central Mississippi Planning & Development District	3561	BG
Mississippi	28089		Central Mississippi Planning & Development District	3561	BG
Mississippi	28121		Central Mississippi Planning & Development District	3561	BG
Mississippi	28045		Gulf RPC	0921	BG
Mississippi	28047		Gulf RPC	0921	BG
Mississippi	28059		Gulf RPC	0921	BG
Mississippi	28035		Hattiesburg-Petal-Forrest-Lamar MPO	3286	TAZ
Mississippi	28073		Hattiesburg-Petal-Forrest-Lamar MPO	3286	TAZ
Mississippi	28033		Memphis MPO	4921	BG
Missouri	29019		Columbia Area Transportation Study	1741	TAZ
Missouri	29071		East-West Gateway Coordinating Council	7041	TAZ
Missouri	29099		East-West Gateway Coordinating Council	7041	TAZ
Missouri	29183		East-West Gateway Coordinating Council	7041	TAZ
Missouri	29189		East-West Gateway Coordinating Council	7041	TAZ
Missouri	29510		East-West Gateway Coordinating Council	7041	TAZ
Missouri	29097		Joplin Area Transportation Study Organization	3711	BG
Missouri	29145		Joplin Area Transportation Study Organization	3711	BG
Missouri	29037		Mid-America Regional Council	3761	TAZ
Missouri	29047		Mid-America Regional Council	3761	TAZ
Missouri	29049		Mid-America Regional Council	3761	TAZ
Missouri	29095		Mid-America Regional Council	3761	TAZ
Missouri	29107		Mid-America Regional Council	3761	TAZ
Missouri	29165		Mid-America Regional Council	3761	TAZ
Missouri	29177		Mid-America Regional Council	3761	TAZ
Missouri	29043		Springfield Area Transportation Study Organization	7921	TAZ
Missouri	29077		Springfield Area Transportation Study Organization	7921	TAZ
Missouri	29003		St. Joseph Area Transportation Study	7001	TAZ
Missouri	29021		St. Joseph Area Transportation Study	7001	TAZ
Montana	30013		Great Falls City-County Planning Board	3041	BG
Montana	30063		Missoula Transportation Policy Coordinating Committee	5141	BG
Montana	30111		Yellowstone County Board of Planning	0881	Tract
Nebraska	31109		Lincoln-Lancaster MPO	4361	TAZ
Nebraska	31055		Omaha-Council Bluffs Metro Area Planning Agency	5921	TAZ
Nebraska	31153		Omaha-Council Bluffs Metro Area Planning Agency	5921	TAZ
Nebraska	31177		Omaha-Council Bluffs Metro Area Planning Agency	5921	TAZ
Nebraska	31043		Siouxland Interstate MPC	7721	TAZ
Nevada	32003		Southern Nevada RTC	4121	Tract

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Nevada	32005		Tahoe MPO	9371	BG
Nevada	32031		Tahoe MPO	9371	BG
Nevada	32510		Tahoe MPO	9371	BG
Nevada	32031		Washoe County RTC	6721	TAZ
New Hampshire	**New England states are shown at the end of this file**				
New Jersey	34001		Delaware Valley RPC	6161	TAZ
New Jersey	34005		Delaware Valley RPC	6161	TAZ
New Jersey	34007		Delaware Valley RPC	6161	TAZ
New Jersey	34011		Delaware Valley RPC	6161	TAZ
New Jersey	34015		Delaware Valley RPC	6161	TAZ
New Jersey	34019		Delaware Valley RPC	6161	Tract
New Jersey	34021		Delaware Valley RPC	6161	TAZ
New Jersey	34023		Delaware Valley RPC	6161	Tract
New Jersey	34025		Delaware Valley RPC	6161	Tract
New Jersey	34029		Delaware Valley RPC	6161	Tract
New Jersey	34033		Delaware Valley RPC	6161	TAZ
New Jersey	34035		Delaware Valley RPC	6161	Tract
New Jersey	34003		New York MTC	5601	BG
New Jersey	34013		New York MTC	5601	BG
New Jersey	34017		New York MTC	5601	BG
New Jersey	34019		New York MTC	5601	BG
New Jersey	34021		New York MTC	5601	BG
New Jersey	34023		New York MTC	5601	BG
New Jersey	34025		New York MTC	5601	BG
New Jersey	34027		New York MTC	5601	BG
New Jersey	34029		New York MTC	5601	BG
New Jersey	34031		New York MTC	5601	BG
New Jersey	34035		New York MTC	5601	BG
New Jersey	34037		New York MTC	5601	BG
New Jersey	34039		New York MTC	5601	BG
New Jersey	34041		New York MTC	5601	BG
New Jersey	34003		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34013		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34017		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34019		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34023		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34025		North Jersey Transportation Planning Authority	5641	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
New Jersey	34027		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34029		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34031		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34035		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34037		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34039		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34041		North Jersey Transportation Planning Authority	5641	BG
New Jersey	34001		South Jersey Transportation Planning Organization	0561	Tract
New Jersey	34009		South Jersey Transportation Planning Organization	0561	Tract
New Jersey	34011		South Jersey Transportation Planning Organization	0561	Tract
New Jersey	34033		South Jersey Transportation Planning Organization	0561	Tract
New Mexico	35013		El Paso MPO	2321	TAZ
New Mexico	35013		Las Cruces MPO	4101	TAZ
New Mexico	35001		Mid Region COG	0201	TAZ
New Mexico	35043		Mid Region COG	0201	TAZ
New Mexico	35057		Mid Region COG	0201	TAZ
New Mexico	35061		Mid Region COG	0201	TAZ
New Mexico	35049		Santa Fe MPO	7491	BG
New York	36091		Adirondack-Glens Falls Transportation Council	2976	TAZ
New York	36113		Adirondack-Glens Falls Transportation Council	2976	TAZ
New York	36115		Adirondack-Glens Falls Transportation Council	2976	TAZ
New York	36007		Binghamton Metropolitan Transportation Study	0961	TAZ
New York	36107		Binghamton Metropolitan Transportation Study	0961	TAZ
New York	36001		Capital District Transportation Committee	0161	TAZ
New York	36083		Capital District Transportation Committee	0161	TAZ
New York	36091		Capital District Transportation Committee	0161	TAZ
New York	36093		Capital District Transportation Committee	0161	TAZ
New York	36015		Elmira-Chemung Transportation Council	2336	TAZ
New York	36037		Genesee Transportation Council	6841	Tract
New York	36051		Genesee Transportation Council	6841	TAZ
New York	36055		Genesee Transportation Council	6841	TAZ
New York	36069		Genesee Transportation Council	6841	TAZ
New York	36073		Genesee Transportation Council	6841	Tract
New York	36099		Genesee Transportation Council	6841	Tract
New York	36117		Genesee Transportation Council	6841	TAZ
New York	36121		Genesee Transportation Council	6841	Tract
New York	36123		Genesee Transportation Council	6841	Tract
New York	36029		Greater Buffalo Niagara Transportation Commission	1281	TAZ
New York	36063		Greater Buffalo Niagara Transportation Commission	1281	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
New York	36043		Herkimer-Oneida Counties Transportation Study	8681	TAZ
New York	36065		Herkimer-Oneida Counties Transportation Study	8681	TAZ
New York	36109		Ithaca-Tompkins County Transportation Council	3511	TAZ
New York	36111		Kingston MPO	3836	BG
New York	36005		New York MTC	5601	BG
New York	36027		New York MTC	5601	BG
New York	36047		New York MTC	5601	BG
New York	36059		New York MTC	5601	BG
New York	36061		New York MTC	5601	BG
New York	36071		New York MTC	5601	BG
New York	36079		New York MTC	5601	BG
New York	36081		New York MTC	5601	BG
New York	36085		New York MTC	5601	BG
New York	36087		New York MTC	5601	BG
New York	36103		New York MTC	5601	BG
New York	36105		New York MTC	5601	BG
New York	36111		New York MTC	5601	BG
New York	36119		New York MTC	5601	BG
New York	36071		Newburgh-Orange County Transportation Council	5661	TAZ
New York	36021		Poughkeepsie-Dutchess County Transportation Council	2281	BG
New York	36027		Poughkeepsie-Dutchess County Transportation Council	2281	BG
New York	36071		Poughkeepsie-Dutchess County Transportation Council	2281	BG
New York	36079		Poughkeepsie-Dutchess County Transportation Council	2281	BG
New York	36087		Poughkeepsie-Dutchess County Transportation Council	2281	BG
New York	36111		Poughkeepsie-Dutchess County Transportation Council	2281	BG
New York	36119		Poughkeepsie-Dutchess County Transportation Council	2281	BG
New York	36053		Syracuse Metropolitan Transportation Council	8161	BG
New York	36067		Syracuse Metropolitan Transportation Council	8161	TAZ
New York	36075		Syracuse Metropolitan Transportation Council	8161	BG
North Carolina	37021		Asheville Urban Area MPO	0481	BG
North Carolina	37087		Asheville Urban Area MPO	0481	BG
North Carolina	37089		Asheville Urban Area MPO	0481	BG
North Carolina	37115		Asheville Urban Area MPO	0481	BG
North Carolina	37175		Asheville Urban Area MPO	0481	BG
North Carolina	37001		Burlington-Graham MPO	3111	BG
North Carolina	37081		Burlington-Graham MPO	3111	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
North Carolina	37135		Burlington-Graham MPO	3111	BG
North Carolina	37025		Cabarrus-South Rowan MPO	1861	TAZ
North Carolina	37159		Cabarrus-South Rowan MPO	1861	TAZ
North Carolina	37037		Capital Area MPO	6641	BG
North Carolina	37069		Capital Area MPO	6641	TAZ
North Carolina	37085		Capital Area MPO	6641	TAZ
North Carolina	37101		Capital Area MPO	6641	TAZ
North Carolina	37183		Capital Area MPO	6641	TAZ
North Carolina	37133		City of Jacksonville	3606	TAZ
North Carolina	37001		Durham-Chapel Hill-Carrboro MPO	2261	BG
North Carolina	37037		Durham-Chapel Hill-Carrboro MPO	2261	TAZ
North Carolina	37063		Durham-Chapel Hill-Carrboro MPO	2261	TAZ
North Carolina	37069		Durham-Chapel Hill-Carrboro MPO	2261	TAZ
North Carolina	37077		Durham-Chapel Hill-Carrboro MPO	2261	TAZ
North Carolina	37085		Durham-Chapel Hill-Carrboro MPO	2261	TAZ
North Carolina	37101		Durham-Chapel Hill-Carrboro MPO	2261	TAZ
North Carolina	37135		Durham-Chapel Hill-Carrboro MPO	2261	TAZ
North Carolina	37145		Durham-Chapel Hill-Carrboro MPO	2261	TAZ
North Carolina	37183		Durham-Chapel Hill-Carrboro MPO	2261	TAZ
North Carolina	37051		Fayetteville Area MPO	2561	TAZ
North Carolina	37085		Fayetteville Area MPO	2561	TAZ
North Carolina	37093		Fayetteville Area MPO	2561	BG
North Carolina	37071		Gaston Urban Area MPO	2966	TAZ
North Carolina	37191		Goldsboro Urbanized Area MPO	2981	TAZ
North Carolina	37081		Greensboro Urban Area MPO	3121	BG
North Carolina	37147		Greenville Urban Area MPO	3151	TAZ
North Carolina	37003		Hickory-Newton-Conover MPO	3291	TAZ
North Carolina	37023		Hickory-Newton-Conover MPO	3291	TAZ
North Carolina	37027		Hickory-Newton-Conover MPO	3291	TAZ
North Carolina	37035		Hickory-Newton-Conover MPO	3291	TAZ
North Carolina	37057		High Point Urban Area MPO	3301	BG
North Carolina	37067		High Point Urban Area MPO	3301	BG
North Carolina	37081		High Point Urban Area MPO	3301	BG
North Carolina	37151		High Point Urban Area MPO	3301	BG
North Carolina	37119		Mecklenburg-Union MPO	1521	TAZ
North Carolina	37179		Mecklenburg-Union MPO	1521	TAZ
North Carolina	37065		Rocky Mount Urban Area MPO	6896	BG
North Carolina	37127		Rocky Mount Urban Area MPO	6896	BG
North Carolina	37019		Wilmington Urban Area MPO	9181	BG
North Carolina	37129		Wilmington Urban Area MPO	9181	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
North Carolina	37141		Wilmington Urban Area MPO	9181	Tract
North Carolina	37057		Winston Salem/Forsyth County MPO	9201	BG
North Carolina	37059		Winston Salem/Forsyth County MPO	9201	BG
North Carolina	37067		Winston Salem/Forsyth County MPO	9201	TAZ
North Carolina	37169		Winston Salem/Forsyth County MPO	9201	BG
North Dakota	38015		Bismarck-Mandan MPO	1011	BG
North Dakota	38059		Bismarck-Mandan MPO	1011	BG
North Dakota	38017		Fargo-Moorhead Metropolitan COG	2521	TAZ
North Dakota	38035		Grand Forks-East Grand Forks MPO	2986	TAZ
Ohio	39007		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39019		Akron Metropolitan Area Transportation Study	0081	Tract
Ohio	39029		Akron Metropolitan Area Transportation Study	0081	Tract
Ohio	39035		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39055		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39085		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39093		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39099		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39103		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39133		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39151		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39153		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39155		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39169		Akron Metropolitan Area Transportation Study	0081	TAZ
Ohio	39013		Bel-O-Mar Regional Council	9001	TAZ
Ohio	39081		Brooke-Hancock-Jefferson MPC	8081	TAZ
Ohio	39023		Clark County-Springfield Transportation Coord. Committee	8011	TAZ
Ohio	39099		Eastgate Regional COG	9321	TAZ
Ohio	39155		Eastgate Regional COG	9321	TAZ
Ohio	39087		KYOVA Interstate Planning Commission	3401	TAZ
Ohio	39045		Licking County Area Transportation Study	5651	BG
Ohio	39089		Licking County Area Transportation Study	5651	TAZ
Ohio	39127		Licking County Area Transportation Study	5651	BG
Ohio	39003		Lima-Allen County RPC	4321	TAZ
Ohio	39057		Miami Valley RPC	2001	TAZ
Ohio	39109		Miami Valley RPC	2001	TAZ
Ohio	39113		Miami Valley RPC	2001	TAZ
Ohio	39041		Mid-Ohio RPC	1841	BG
Ohio	39045		Mid-Ohio RPC	1841	BG
Ohio	39049		Mid-Ohio RPC	1841	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Ohio	39089		Mid-Ohio RPC	1841	BG
Ohio	39097		Mid-Ohio RPC	1841	BG
Ohio	39129		Mid-Ohio RPC	1841	BG
Ohio	39159		Mid-Ohio RPC	1841	BG
Ohio	39007		Northeast Ohio Areawide Coordinating Agency	1681	TAZ
Ohio	39035		Northeast Ohio Areawide Coordinating Agency	1681	TAZ
Ohio	39055		Northeast Ohio Areawide Coordinating Agency	1681	TAZ
Ohio	39085		Northeast Ohio Areawide Coordinating Agency	1681	TAZ
Ohio	39093		Northeast Ohio Areawide Coordinating Agency	1681	TAZ
Ohio	39103		Northeast Ohio Areawide Coordinating Agency	1681	TAZ
Ohio	39133		Northeast Ohio Areawide Coordinating Agency	1681	TAZ
Ohio	39151		Northeast Ohio Areawide Coordinating Agency	1681	TAZ
Ohio	39153		Northeast Ohio Areawide Coordinating Agency	1681	TAZ
Ohio	39155		Northeast Ohio Areawide Coordinating Agency	1681	TAZ
Ohio	39169		Northeast Ohio Areawide Coordinating Agency	1681	TAZ
Ohio	39015		Ohio-Kentucky-Indiana Regional COG	1641	BG
Ohio	39017		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Ohio	39025		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Ohio	39057		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Ohio	39061		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Ohio	39109		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Ohio	39113		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Ohio	39165		Ohio-Kentucky-Indiana Regional COG	1641	TAZ
Ohio	39139		Richland County RPC	4801	BG
Ohio	39019		Stark County Area Transportation Study	1321	Tract
Ohio	39151		Stark County Area Transportation Study	1321	TAZ
Ohio	39051		Toledo Metropolitan Area COG	8401	BG
Ohio	39095		Toledo Metropolitan Area COG	8401	TAZ
Ohio	39123		Toledo Metropolitan Area COG	8401	TAZ
Ohio	39143		Toledo Metropolitan Area COG	8401	TAZ
Ohio	39173		Toledo Metropolitan Area COG	8401	TAZ
Ohio	39167		WWW Interstate Planning Commission	6021	TAZ
Oklahoma	40017		Association of Central Oklahoma Governments	5881	TAZ
Oklahoma	40027		Association of Central Oklahoma Governments	5881	TAZ
Oklahoma	40051		Association of Central Oklahoma Governments	5881	TAZ
Oklahoma	40083		Association of Central Oklahoma Governments	5881	TAZ
Oklahoma	40087		Association of Central Oklahoma Governments	5881	TAZ
Oklahoma	40109		Association of Central Oklahoma Governments	5881	TAZ
Oklahoma	40125		Association of Central Oklahoma Governments	5881	TAZ
Oklahoma	40037		Indian Nations COG	8561	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Oklahoma	40097		Indian Nations COG	8561	Tract
Oklahoma	40101		Indian Nations COG	8561	Tract
Oklahoma	40111		Indian Nations COG	8561	Tract
Oklahoma	40113		Indian Nations COG	8561	TAZ
Oklahoma	40117		Indian Nations COG	8561	Tract
Oklahoma	40131		Indian Nations COG	8561	BG
Oklahoma	40143		Indian Nations COG	8561	TAZ
Oklahoma	40145		Indian Nations COG	8561	TAZ
Oklahoma	40147		Indian Nations COG	8561	Tract
Oklahoma	40031		Lawton Metropolitan Area PC	4201	TAZ
Oklahoma	40079		Western Arkansas PDD	2721	BG
Oklahoma	40135		Western Arkansas PDD	2721	TAZ
Oregon	41045		Community Planning Assoc. of Southwest Idaho	1081	Tract
Oregon	41039		Lane Council of Governments	2401	TAZ
Oregon	41005		Metro	6441	BG
Oregon	41051		Metro	6441	BG
Oregon	41067		Metro	6441	BG
Oregon	41029		Rogue Valley MPO	4991	BG
Oregon	41047		Salem Keizer Area Transportation Study	7081	BG
Oregon	41053		Salem Keizer Area Transportation Study	7081	BG
Pennsylvania	42001		Baltimore Metropolitan Council	0721	Tract
Pennsylvania	42133		Baltimore Metropolitan Council	0721	Tract
Pennsylvania	42115		Binghamton Metropolitan Transportation Study	0961	BG
Pennsylvania	42013		Blair County Planning Commission	0281	Tract
Pennsylvania	42021		Cambria County Planning Commission	3681	BG
Pennsylvania	42027		Centre Region MPO	8051	TAZ
Pennsylvania	42011		Delaware Valley RPC	6161	TAZ
Pennsylvania	42017		Delaware Valley RPC	6161	TAZ
Pennsylvania	42029		Delaware Valley RPC	6161	TAZ
Pennsylvania	42045		Delaware Valley RPC	6161	TAZ
Pennsylvania	42071		Delaware Valley RPC	6161	TAZ
Pennsylvania	42077		Delaware Valley RPC	6161	TAZ
Pennsylvania	42091		Delaware Valley RPC	6161	TAZ
Pennsylvania	42095		Delaware Valley RPC	6161	TAZ
Pennsylvania	42101		Delaware Valley RPC	6161	TAZ
Pennsylvania	42049		Erie MPO	2361	BG
Pennsylvania	42055		Hagerstown-Eastern Panhandle MPO	3181	TAZ
Pennsylvania	42041		Harrisburg Area Transportation Study	3241	TAZ
Pennsylvania	42043		Harrisburg Area Transportation Study	3241	TAZ
Pennsylvania	40271		Harrisburg Area Transportation Study	3241	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Pennsylvania	42075		Harrisburg Area Transportation Study	3241	BG
Pennsylvania	42099		Harrisburg Area Transportation Study	3241	TAZ
Pennsylvania	42133		Harrisburg Area Transportation Study	3241	TAZ
Pennsylvania	42069		Lackawanna-Luzerne Transportation Study	7561	BG
Pennsylvania	42079		Lackawanna-Luzerne Transportation Study	7561	BG
Pennsylvania	42071		Lancaster County Transp. Coordinating Committee	4001	BG
Pennsylvania	42073		Lawrence County Planning Department	5401	BG
Pennsylvania	42025		Lehigh Valley Transportation Study	0241	Tract
Pennsylvania	42077		Lehigh Valley Transportation Study	0241	TAZ
Pennsylvania	42095		Lehigh Valley Transportation Study	0241	TAZ
Pennsylvania	42081		Lycoming County Planning Commission	9141	BG
Pennsylvania	42001		Metopolitan Washington COG	8841	Tract
Pennsylvania	42055		Metopolitan Washington COG	8841	Tract
Pennsylvania	42133		Metopolitan Washington COG	8841	Tract
Pennsylvania	42011		Reading Area Transportation Study	6681	TAZ
Pennsylvania	42085		Shenango Valley Area Transportation Study	7611	Tract
Pennsylvania	42003		Southwestern Pennsylvania Commission	6281	BG
Pennsylvania	42005		Southwestern Pennsylvania Commission	6281	BG
Pennsylvania	42007		Southwestern Pennsylvania Commission	6281	BG
Pennsylvania	42019		Southwestern Pennsylvania Commission	6281	BG
Pennsylvania	42051		Southwestern Pennsylvania Commission	6281	BG
Pennsylvania	42059		Southwestern Pennsylvania Commission	6281	BG
Pennsylvania	42063		Southwestern Pennsylvania Commission	6281	BG
Pennsylvania	42125		Southwestern Pennsylvania Commission	6281	BG
Pennsylvania	42129		Southwestern Pennsylvania Commission	6281	BG
Pennsylvania	42133		York County PC	9281	TAZ
Rhode Island	**New England states are shown at the end of this file**				
South Carolina	45007		Anderson Area Transportation Study	0406	TAZ
South Carolina	45003		Augusta Richmond County PC	0601	TAZ
South Carolina	45063		Central Midlands COG	1761	TAZ
South Carolina	45079		Central Midlands COG	1761	TAZ
South Carolina	45015		Charleston Area Transportation Study	1441	TAZ
South Carolina	45019		Charleston Area Transportation Study	1441	TAZ
South Carolina	45035		Charleston Area Transportation Study	1441	TAZ
South Carolina	45031		Florence Area Transportation Study	2656	TAZ
South Carolina	45041		Florence Area Transportation Study	2656	TAZ
South Carolina	45007		Greenville Area Transportation Study	3161	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
South Carolina	45045		Greenville Area Transportation Study	3161	TAZ
South Carolina	45059		Greenville Area Transportation Study	3161	TAZ
South Carolina	45077		Greenville Area Transportation Study	3161	TAZ
South Carolina	45083		Greenville Area Transportation Study	3161	TAZ
South Carolina	45091		Rock Hill-Fort Mill Area Transportation Study	6861	TAZ
South Carolina	45083		Spartanburg Area Transportation Study	7821	TAZ
South Carolina	45085		Sumter Area Transportation Study	8141	TAZ
South Carolina	45043		Waccamaw RPC	2971	TAZ
South Carolina	45051		Waccamaw RPC	2971	TAZ
South Dakota	46093		Rapid City Area MPO	6661	BG
South Dakota	46103		Rapid City Area MPO	6661	BG
South Dakota	46083		Sioux Falls MPO	7761	TAZ
South Dakota	46099		Sioux Falls MPO	7761	TAZ
South Dakota	46127		Siouxland Interstate MPC	7721	TAZ
Tennessee	47163		Bristol Urban Area MPO	1161	TAZ
Tennessee	47065		Chattanooga Urban Area MPO	1561	BG
Tennessee	47115		Chattanooga Urban Area MPO	1561	BG
Tennessee	47125		Clarksville Urban Area MPO	1661	BG
Tennessee	47113		Jackson MPO	3581	TAZ
Tennessee	47019		Johnson City MPO	3661	TAZ
Tennessee	47171		Johnson City MPO	3661	Tract
Tennessee	47179		Johnson City MPO	3661	TAZ
Tennessee	47073		Kingsport Urban Area MPO	3831	BG
Tennessee	47163		Kingsport Urban Area MPO	3831	BG
Tennessee	47179		Kingsport Urban Area MPO	3831	BG
Tennessee	47001		Knoxville MPO	3841	BG
Tennessee	47009		Knoxville MPO	3841	TAZ
Tennessee	47093		Knoxville MPO	3841	TAZ
Tennessee	47105		Knoxville MPO	3841	BG
Tennessee	47155		Knoxville MPO	3841	BG
Tennessee	47173		Knoxville MPO	3841	BG
Tennessee	47047		Memphis MPO	4921	BG
Tennessee	47157		Memphis MPO	4921	TAZ
Tennessee	47021		Nashville Area MPO	5361	BG
Tennessee	47037		Nashville Area MPO	5361	BG
Tennessee	47043		Nashville Area MPO	5361	BG
Tennessee	47119		Nashville Area MPO	5361	BG
Tennessee	47125		Nashville Area MPO	5361	BG
Tennessee	47147		Nashville Area MPO	5361	BG
Tennessee	47149		Nashville Area MPO	5361	BG

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Tennessee	47165		Nashville Area MPO	5361	BG
Tennessee	47187		Nashville Area MPO	5361	BG
Tennessee	47189		Nashville Area MPO	5361	TAZ
Texas	48253		Abilene MPO	0041	TAZ
Texas	48441		Abilene MPO	0041	TAZ
Texas	48375		Amarillo MPO	0321	TAZ
Texas	48381		Amarillo MPO	0321	TAZ
Texas	48061		Brownsville MPO	1241	TAZ
Texas	48041		Bryan-College Station MPO	1261	TAZ
Texas	48021		Capital Area MPO	0641	TAZ
Texas	48055		Capital Area MPO	0641	TAZ
Texas	48209		Capital Area MPO	0641	TAZ
Texas	48453		Capital Area MPO	0641	TAZ
Texas	48491		Capital Area MPO	0641	TAZ
Texas	48355		Corpus Christi MPO	1881	TAZ
Texas	48409		Corpus Christi MPO	1881	TAZ
Texas	48141		El Paso MPO	2321	TAZ
Texas	48061		Harlingen-San Benito MPO	3201	TAZ
Texas	48215		Hidalgo County MPO	4881	TAZ
Texas	48039		Houston-Galveston Area Council	3361	TAZ
Texas	48071		Houston-Galveston Area Council	3361	TAZ
Texas	48157		Houston-Galveston Area Council	3361	TAZ
Texas	48167		Houston-Galveston Area Council	3361	TAZ
Texas	48201		Houston-Galveston Area Council	3361	TAZ
Texas	48291		Houston-Galveston Area Council	3361	TAZ
Texas	48339		Houston-Galveston Area Council	3361	TAZ
Texas	48473		Houston-Galveston Area Council	3361	TAZ
Texas	48027		Killeen-Temple Urban Transportation Study	3811	TAZ
Texas	48099		Killeen-Temple Urban Transportation Study	3811	TAZ
Texas	48281		Killeen-Temple Urban Transportation Study	3811	TAZ
Texas	48479		Laredo Urban Transportation Study	4081	TAZ
Texas	48183		Longview MPO	4421	TAZ
Texas	48203		Longview MPO	4421	TAZ
Texas	48401		Longview MPO	4421	TAZ
Texas	48423		Longview MPO	4421	TAZ
Texas	48459		Longview MPO	4421	TAZ
Texas	48303		Lubbock MPO	4601	TAZ
Texas	48085		North Central Texas COG	1921	TAZ
Texas	48113		North Central Texas COG	1921	TAZ
Texas	48121		North Central Texas COG	1921	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Texas	48139		North Central Texas COG	1921	TAZ
Texas	48251		North Central Texas COG	1921	TAZ
Texas	48257		North Central Texas COG	1921	TAZ
Texas	48349		North Central Texas COG	1921	TAZ
Texas	48363		North Central Texas COG	1921	TAZ
Texas	48367		North Central Texas COG	1921	TAZ
Texas	48397		North Central Texas COG	1921	TAZ
Texas	48439		North Central Texas COG	1921	TAZ
Texas	48497		North Central Texas COG	1921	TAZ
Texas	48135		Permian Basin RPC	5801	Tract
Texas	48329		Permian Basin RPC	5801	Tract
Texas	48451		San Angelo MPO	7201	TAZ
Texas	48029		San Antonio-Bexar County MPO	7241	TAZ
Texas	48091		San Antonio-Bexar County MPO	7241	TAZ
Texas	48187		San Antonio-Bexar County MPO	7241	TAZ
Texas	48493		San Antonio-Bexar County MPO	7241	TAZ
Texas	48181		Sherman-Denison MPO	7641	TAZ
Texas	48199		South East Texas RPC	0841	TAZ
Texas	48245		South East Texas RPC	0841	TAZ
Texas	48361		South East Texas RPC	0841	TAZ
Texas	48037		Texarkana MPO	8361	TAZ
Texas	48423		Tyler MPO	8641	TAZ
Texas	48469		Victoria MPO	8751	TAZ
Texas	48309		Waco MPO	8801	TAZ
Texas	48009		Wichita Falls MPO	9081	TAZ
Texas	48077		Wichita Falls MPO	9081	TAZ
Texas	48485		Wichita Falls MPO	9081	TAZ
Utah	49005		Cache MPO	4411	TAZ
Utah	49053		Dixie MPO	6971	BG
Utah	49043		Mountainland Association of Governments	6521	BG
Utah	49049		Mountainland Association of Governments	6521	TAZ
Utah	49051		Mountainland Association of Governments	6521	BG
Utah	49011		Wasatch Front Regional Council	7161	TAZ
Utah	49029		Wasatch Front Regional Council	7161	TAZ
Utah	49035		Wasatch Front Regional Council	7161	TAZ
Utah	49045		Wasatch Front Regional Council	7161	TAZ
Utah	49049		Wasatch Front Regional Council	7161	TAZ
Utah	49057		Wasatch Front Regional Council	7161	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Vermont	**New England states are shown at the end of this file**				
Virginia	51013		Baltimore Metropolitan Council	0721	Tract
Virginia	51059		Baltimore Metropolitan Council	0721	Tract
Virginia	51107		Baltimore Metropolitan Council	0721	Tract
Virginia	51153		Baltimore Metropolitan Council	0721	Tract
Virginia	51510		Baltimore Metropolitan Council	0721	Tract
Virginia	51600		Baltimore Metropolitan Council	0721	Tract
Virginia	51610		Baltimore Metropolitan Council	0721	Tract
Virginia	51683		Baltimore Metropolitan Council	0721	Tract
Virginia	51685		Baltimore Metropolitan Council	0721	Tract
Virginia	51191		Bristol Urban Area MPO	1161	TAZ
Virginia	51520		Bristol Urban Area MPO	1161	TAZ
Virginia	51009		Central Virginia MPO	4641	BG
Virginia	51019		Central Virginia MPO	4641	BG
Virginia	51031		Central Virginia MPO	4641	BG
Virginia	51680		Central Virginia MPO	4641	BG
Virginia	51041		Crater Planning District Commission	6141	TAZ
Virginia	51053		Crater Planning District Commission	6141	TAZ
Virginia	51149		Crater Planning District Commission	6141	TAZ
Virginia	51570		Crater Planning District Commission	6141	TAZ
Virginia	51670		Crater Planning District Commission	6141	TAZ
Virginia	51730		Crater Planning District Commission	6141	TAZ
Virginia	51033		Fredericksburg Area MPO	2801	BG
Virginia	51099		Fredericksburg Area MPO	2801	TAZ
Virginia	51177		Fredericksburg Area MPO	2801	TAZ
Virginia	51179		Fredericksburg Area MPO	2801	TAZ
Virginia	51630		Fredericksburg Area MPO	2801	TAZ
Virginia	51073		Hampton Roads PDC	5721	TAZ
Virginia	51093		Hampton Roads PDC	5721	TAZ
Virginia	51095		Hampton Roads PDC	5721	TAZ
Virginia	51199		Hampton Roads PDC	5721	TAZ
Virginia	51550		Hampton Roads PDC	5721	TAZ
Virginia	51650		Hampton Roads PDC	5721	TAZ
Virginia	51700		Hampton Roads PDC	5721	TAZ
Virginia	51710		Hampton Roads PDC	5721	TAZ
Virginia	51735		Hampton Roads PDC	5721	TAZ
Virginia	51740		Hampton Roads PDC	5721	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Virginia	51800		Hampton Roads PDC	5721	TAZ
Virginia	51810		Hampton Roads PDC	5721	TAZ
Virginia	51830		Hampton Roads PDC	5721	TAZ
Virginia	51169		Kingsport Urban Area MPO	3831	BG
Virginia	51013		Metropolitan Washington COG	8841	TAZ
Virginia	51033		Metropolitan Washington COG	8841	Tract
Virginia	51043		Metropolitan Washington COG	8841	TAZ
Virginia	51047		Metropolitan Washington COG	8841	TAZ
Virginia	51057		Metropolitan Washington COG	8841	Tract
Virginia	51059		Metropolitan Washington COG	8841	TAZ
Virginia	51061		Metropolitan Washington COG	8841	TAZ
Virginia	51069		Metropolitan Washington COG	8841	Tract
Virginia	51099		Metropolitan Washington COG	8841	TAZ
Virginia	51107		Metropolitan Washington COG	8841	TAZ
Virginia	51137		Metropolitan Washington COG	8841	Tract
Virginia	51153		Metropolitan Washington COG	8841	TAZ
Virginia	51157		Metropolitan Washington COG	8841	Tract
Virginia	51177		Metropolitan Washington COG	8841	TAZ
Virginia	51179		Metropolitan Washington COG	8841	TAZ
Virginia	51187		Metropolitan Washington COG	8841	TAZ
Virginia	51193		Metropolitan Washington COG	8841	Tract
Virginia	51510		Metropolitan Washington COG	8841	TAZ
Virginia	51600		Metropolitan Washington COG	8841	TAZ
Virginia	51610		Metropolitan Washington COG	8841	TAZ
Virginia	51630		Metropolitan Washington COG	8841	TAZ
Virginia	51683		Metropolitan Washington COG	8841	TAZ
Virginia	51685		Metropolitan Washington COG	8841	TAZ
Virginia	51840		Metropolitan Washington COG	8841	Tract
Virginia	51036		Richmond Regional PDC	6761	TAZ
Virginia	51041		Richmond Regional PDC	6761	TAZ
Virginia	51075		Richmond Regional PDC	6761	TAZ
Virginia	51085		Richmond Regional PDC	6761	TAZ
Virginia	51087		Richmond Regional PDC	6761	TAZ
Virginia	51127		Richmond Regional PDC	6761	TAZ
Virginia	51145		Richmond Regional PDC	6761	TAZ
Virginia	51760		Richmond Regional PDC	6761	TAZ
Virginia	51019		Roanoke Valley Area MPO	6801	BG
Virginia	51023		Roanoke Valley Area MPO	6801	TAZ
Virginia	51161		Roanoke Valley Area MPO	6801	TAZ
Virginia	51770		Roanoke Valley Area MPO	6801	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Virginia	51775		Roanoke Valley Area MPO	6801	TAZ
Virginia	51003		Thomas Jefferson PDC	1541	TAZ
Virginia	51015		Thomas Jefferson PDC	1541	Tract
Virginia	51065		Thomas Jefferson PDC	1541	Tract
Virginia	51079		Thomas Jefferson PDC	1541	Tract
Virginia	51109		Thomas Jefferson PDC	1541	Tract
Virginia	51125		Thomas Jefferson PDC	1541	Tract
Virginia	51137		Thomas Jefferson PDC	1541	Tract
Virginia	51540		Thomas Jefferson PDC	1541	TAZ
Virginia	51143		West Piedmont RPC	1951	TAZ
Virginia	51590		West Piedmont RPC	1951	TAZ
Washington	53005		Benton-Franklin COG	6741	TAZ
Washington	53021		Benton-Franklin COG	6741	TAZ
Washington	53071		Benton-Franklin COG	6741	TAZ
Washington	53015		Longview-Kelso-Rainier MPO	4416	BG
Washington	53027		Longview-Kelso-Rainier MPO	4416	BG
Washington	53041		Longview-Kelso-Rainier MPO	4416	BG
Washington	53049		Longview-Kelso-Rainier MPO	4416	BG
Washington	53069		Longview-Kelso-Rainier MPO	4416	BG
Washington	53009		Puget Sound Regional Council	7601	Tract
Washington	53029		Puget Sound Regional Council	7601	BG
Washington	53031		Puget Sound Regional Council	7601	Tract
Washington	53033		Puget Sound Regional Council	7601	TAZ
Washington	53035		Puget Sound Regional Council	7601	TAZ
Washington	53045		Puget Sound Regional Council	7601	Tract
Washington	53053		Puget Sound Regional Council	7601	TAZ
Washington	53057		Puget Sound Regional Council	7601	TAZ
Washington	53061		Puget Sound Regional Council	7601	TAZ
Washington	53067		Puget Sound Regional Council	7601	BG
Washington	53029		Skagit COG	5261	BG
Washington	53055		Skagit COG	5261	BG
Washington	53057		Skagit COG	5261	TAZ
Washington	53061		Skagit COG	5261	BG
Washington	53073		Skagit COG	5261	TAZ
Washington	53011		Southwest Washington Regional Transp. Council	8691	BG
Washington	53063		Spokane RTC	7841	TAZ
Washington	53027		Thurston RPC	5911	Tract
Washington	53041		Thurston RPC	5911	Tract
Washington	53045		Thurston RPC	5911	Tract
Washington	53053		Thurston RPC	5911	Tract

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Washington	53067		Thurston RPC	5911	TAZ
Washington	53007		Wenatchee Valley Transportation Council	8946	BG
Washington	53017		Wenatchee Valley Transportation Council	8946	BG
Washington	53047		Wenatchee Valley Transportation Council	8946	BG
Washington	53029		Whatcom COG	0861	BG
Washington	53055		Whatcom COG	0861	BG
Washington	53057		Whatcom COG	0861	TAZ
Washington	53061		Whatcom COG	0861	Tract
Washington	53073		Whatcom COG	0861	TAZ
Washington	53077		Yakima Valley COG	9261	TAZ
West Virginia	54051		Bel-O-Mar Regional Council	9001	TAZ
West Virginia	54069		Bel-O-Mar Regional Council	9001	TAZ
West Virginia	54009		Brooke-Hancock-Jefferson MPC	8081	TAZ
West Virginia	54029		Brooke-Hancock-Jefferson MPC	8081	TAZ
West Virginia	54057		Cumberland Urbanized Area	1901	Tract
West Virginia	54003		Hagerstown-Eastern Panhandle MPO	3181	TAZ
West Virginia	54037		Hagerstown-Eastern Panhandle MPO	3181	TAZ
West Virginia	54011		KYOVA Interstate Planning Commission	3401	TAZ
West Virginia	54099		KYOVA Interstate Planning Commission	3401	TAZ
West Virginia	54003		Metropolitan Washington COG	8841	TAZ
West Virginia	54027		Metropolitan Washington COG	8841	Tract
West Virginia	54037		Metropolitan Washington COG	8841	TAZ
West Virginia	54061		Morgantown, WV MPO	5251	TAZ
West Virginia	54005		Regional Intergovernmental Council	1481	TAZ
West Virginia	54015		Regional Intergovernmental Council	1481	TAZ
West Virginia	54039		Regional Intergovernmental Council	1481	TAZ
West Virginia	54079		Regional Intergovernmental Council	1481	TAZ
West Virginia	54107		WWW Interstate Planning Commission	6021	TAZ
Wisconsin	55031		Arrowhead RDC	2241	TAZ
Wisconsin	55117		Bay-Lake RPC	3081	TAZ
Wisconsin	55009		Brown County Planning Commission	3086	TAZ
Wisconsin	55059		Chicago Area Transportation Study	1601	TAZ
Wisconsin	55101		Chicago Area Transportation Study	1601	TAZ
Wisconsin	55105		Chicago Area Transportation Study	1601	TAZ
Wisconsin	55127		Chicago Area Transportation Study	1601	TAZ
Wisconsin	55043		Dubuque MATS	2201	TAZ
Wisconsin	55015		East Central Wisconsin RPC	0461	TAZ
Wisconsin	55039		East Central Wisconsin RPC	0461	TAZ
Wisconsin	55087		East Central Wisconsin RPC	0461	TAZ
Wisconsin	55139		East Central Wisconsin RPC	0461	TAZ

State	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Wisconsin	55105		Janesville Area Transportation Study	3621	TAZ
Wisconsin	55063		La Crosse Area Planning Committee	3871	TAZ
Wisconsin	55081		La Crosse Area Planning Committee	3871	Tract
Wisconsin	55121		La Crosse Area Planning Committee	3871	Tract
Wisconsin	55123		La Crosse Area Planning Committee	3871	Tract
Wisconsin	55025		Madison Area MPO	4721	TAZ
Wisconsin	55073		Marathon County Metro Planning Commission	8941	TAZ
Wisconsin	55033		Metropolitan Council of the Twin Cities Area	5121	Tract
Wisconsin	55093		Metropolitan Council of the Twin Cities Area	5121	TAZ
Wisconsin	55095		Metropolitan Council of the Twin Cities Area	5121	TAZ
Wisconsin	55109		Metropolitan Council of the Twin Cities Area	5121	TAZ
Wisconsin	55105		Rockford Area Transportation Study	6881	TAZ
Wisconsin	55059		South East Wisconsin RPC	5081	BG
Wisconsin	55079		South East Wisconsin RPC	5081	BG
Wisconsin	55089		South East Wisconsin RPC	5081	BG
Wisconsin	55101		South East Wisconsin RPC	5081	BG
Wisconsin	55127		South East Wisconsin RPC	5081	BG
Wisconsin	55131		South East Wisconsin RPC	5081	BG
Wisconsin	55133		South East Wisconsin RPC	5081	BG
Wisconsin	55105		Stateline Area Transportation Study	0866	TAZ
Wisconsin	55017		West Central Wisconsin RPC	2291	TAZ
Wisconsin	55035		West Central Wisconsin RPC	2291	TAZ
Wyoming	56025		Casper Area Transportation Planning Process	1351	BG
Wyoming	56021		Cheyenne Area Transportation Planning Process	1581	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Connecticut	09003	02060	CAPITOL	0910	TAZ
Connecticut	09003	05910	CAPITOL	0910	TAZ
Connecticut	09003	12270	CAPITOL	0910	TAZ
Connecticut	09003	22070	CAPITOL	0910	TAZ
Connecticut	09003	22630	CAPITOL	0910	TAZ
Connecticut	09003	24800	CAPITOL	0910	TAZ
Connecticut	09003	25990	CAPITOL	0910	TAZ
Connecticut	09003	27600	CAPITOL	0910	TAZ
Connecticut	09003	31240	CAPITOL	0910	TAZ
Connecticut	09003	32640	CAPITOL	0910	TAZ
Connecticut	09003	37070	CAPITOL	0910	TAZ
Connecticut	09003	44700	CAPITOL	0910	TAZ
Connecticut	09003	45820	CAPITOL	0910	TAZ
Connecticut	09003	52140	CAPITOL	0910	TAZ
Connecticut	09003	65370	CAPITOL	0910	TAZ
Connecticut	09003	68940	CAPITOL	0910	TAZ
Connecticut	09003	71390	CAPITOL	0910	TAZ
Connecticut	09003	74540	CAPITOL	0910	TAZ
Connecticut	09003	82590	CAPITOL	0910	TAZ
Connecticut	09003	84900	CAPITOL	0910	TAZ
Connecticut	09003	87000	CAPITOL	0910	TAZ
Connecticut	09003	87070	CAPITOL	0910	TAZ
Connecticut	09013	01080	CAPITOL	0910	TAZ
Connecticut	09013	06260	CAPITOL	0910	TAZ
Connecticut	09013	25360	CAPITOL	0910	TAZ
Connecticut	09013	37910	CAPITOL	0910	TAZ
Connecticut	09013	69220	CAPITOL	0910	TAZ
Connecticut	09013	76290	CAPITOL	0910	TAZ
Connecticut	09013	78250	CAPITOL	0910	TAZ
Connecticut	09003	04300	CENTRAL CONNECTICUT	0909	TAZ
Connecticut	09003	08490	CENTRAL CONNECTICUT	0909	TAZ
Connecticut	09003	10100	CENTRAL CONNECTICUT	0909	TAZ
Connecticut	09003	50440	CENTRAL CONNECTICUT	0909	TAZ
Connecticut	09003	60120	CENTRAL CONNECTICUT	0909	TAZ
Connecticut	09003	70550	CENTRAL CONNECTICUT	0909	TAZ
Connecticut	09005	60750	CENTRAL CONNECTICUT	0909	TAZ
Connecticut	09005	04930	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09005	75730	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09005	80490	CENTRAL NAUGATUCK VALLEY	0905	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Connecticut	09005	87910	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09009	03250	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09009	14160	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09009	46940	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09009	49950	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09009	58300	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09009	62290	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09009	69640	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09009	80070	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09009	87560	CENTRAL NAUGATUCK VALLEY	0905	TAZ
Connecticut	09015	all	Central Transportation Planning	1126	TAZ
Connecticut	09007	14300	CONNECTICUT RIVER ESTUARY	0912	TAZ
Connecticut	09007	15350	CONNECTICUT RIVER ESTUARY	0912	TAZ
Connecticut	09007	19130	CONNECTICUT RIVER ESTUARY	0912	TAZ
Connecticut	09007	26270	CONNECTICUT RIVER ESTUARY	0912	TAZ
Connecticut	09007	40710	CONNECTICUT RIVER ESTUARY	0912	TAZ
Connecticut	09007	57320	CONNECTICUT RIVER ESTUARY	0912	TAZ
Connecticut	09007	81680	CONNECTICUT RIVER ESTUARY	0912	TAZ
Connecticut	09011	44210	CONNECTICUT RIVER ESTUARY	0912	TAZ
Connecticut	09011	57040	CONNECTICUT RIVER ESTUARY	0912	TAZ
Connecticut	09001	08070	GREATER BRIDGEPORT	0907	TAZ
Connecticut	09001	23890	GREATER BRIDGEPORT	0907	TAZ
Connecticut	09001	26620	GREATER BRIDGEPORT	0907	TAZ
Connecticut	09001	48620	GREATER BRIDGEPORT	0907	TAZ
Connecticut	09001	74190	GREATER BRIDGEPORT	0907	TAZ
Connecticut	09001	77200	GREATER BRIDGEPORT	0907	TAZ
Connecticut	09001	04720	HOUSATONIC VALLEY	0902	TAZ
Connecticut	09001	08980	HOUSATONIC VALLEY	0902	TAZ
Connecticut	09001	18500	HOUSATONIC VALLEY	0902	TAZ
Connecticut	09001	50860	HOUSATONIC VALLEY	0902	TAZ
Connecticut	09001	52980	HOUSATONIC VALLEY	0902	TAZ
Connecticut	09001	63480	HOUSATONIC VALLEY	0902	TAZ
Connecticut	09001	63970	HOUSATONIC VALLEY	0902	TAZ
Connecticut	09001	68310	HOUSATONIC VALLEY	0902	TAZ
Connecticut	09005	08210	HOUSATONIC VALLEY	0902	TAZ
Connecticut	09005	52630	HOUSATONIC VALLEY	0902	TAZ
Connecticut	09003	37140	LITCHFIELD HILLS	0904	TAZ
Connecticut	09005	02760	LITCHFIELD HILLS	0904	TAZ
Connecticut	09005	16050	LITCHFIELD HILLS	0904	TAZ
Connecticut	09005	32290	LITCHFIELD HILLS	0904	TAZ
Connecticut	09005	37280	LITCHFIELD HILLS	0904	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Connecticut	09005	43370	LITCHFIELD HILLS	0904	TAZ
Connecticut	09005	49460	LITCHFIELD HILLS	0904	TAZ
Connecticut	09005	51350	LITCHFIELD HILLS	0904	TAZ
Connecticut	09005	53470	LITCHFIELD HILLS	0904	TAZ
Connecticut	09005	76570	LITCHFIELD HILLS	0904	TAZ
Connecticut	09005	86440	LITCHFIELD HILLS	0904	TAZ
Connecticut	09007	18080	MIDSTATE	0911	TAZ
Connecticut	09007	20810	MIDSTATE	0911	TAZ
Connecticut	09007	22280	MIDSTATE	0911	TAZ
Connecticut	09007	22490	MIDSTATE	0911	TAZ
Connecticut	09007	35230	MIDSTATE	0911	TAZ
Connecticut	09007	47080	MIDSTATE	0911	TAZ
Connecticut	09007	47360	MIDSTATE	0911	TAZ
Connecticut	09007	61800	MIDSTATE	0911	TAZ
Connecticut	09001	all	New York MTC	5601	BG
Connecticut	09005	all	New York MTC	5601	BG
Connecticut	09009	all	New York MTC	5601	BG
Connecticut	09013	77830	NORTHEASTERN CONN	0915	TAZ
Connecticut	09015	09190	NORTHEASTERN CONN	0915	TAZ
Connecticut	09015	12130	NORTHEASTERN CONN	0915	TAZ
Connecticut	09015	21860	NORTHEASTERN CONN	0915	TAZ
Connecticut	09015	40500	NORTHEASTERN CONN	0915	TAZ
Connecticut	09015	59980	NORTHEASTERN CONN	0915	TAZ
Connecticut	09015	61030	NORTHEASTERN CONN	0915	TAZ
Connecticut	09015	62710	NORTHEASTERN CONN	0915	TAZ
Connecticut	09015	73420	NORTHEASTERN CONN	0915	TAZ
Connecticut	09015	75870	NORTHEASTERN CONN	0915	TAZ
Connecticut	09015	88190	NORTHEASTERN CONN	0915	TAZ
Connecticut	09005	10940	NORTHWESTERN CONN	0903	TAZ
Connecticut	09005	17240	NORTHWESTERN CONN	0903	TAZ
Connecticut	09005	40290	NORTHWESTERN CONN	0903	TAZ
Connecticut	09005	54030	NORTHWESTERN CONN	0903	TAZ
Connecticut	09005	65930	NORTHWESTERN CONN	0903	TAZ
Connecticut	09005	66420	NORTHWESTERN CONN	0903	TAZ
Connecticut	09005	67960	NORTHWESTERN CONN	0903	TAZ
Connecticut	09005	79510	NORTHWESTERN CONN	0903	TAZ
Connecticut	09005	79720	NORTHWESTERN CONN	0903	TAZ
Connecticut	09009	04580	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	07310	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	22910	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	34950	SOUTH CENTRAL	0908	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Connecticut	09009	35650	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	44560	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	46520	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	47535	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	52070	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	53890	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	54870	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	57600	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	78740	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	82870	SOUTH CENTRAL	0908	TAZ
Connecticut	09009	87700	SOUTH CENTRAL	0908	TAZ
Connecticut	09001	18850	SOUTH WESTERN	0901	TAZ
Connecticut	09001	33620	SOUTH WESTERN	0901	TAZ
Connecticut	09001	50580	SOUTH WESTERN	0901	TAZ
Connecticut	09001	56060	SOUTH WESTERN	0901	TAZ
Connecticut	09001	73070	SOUTH WESTERN	0901	TAZ
Connecticut	09001	83430	SOUTH WESTERN	0901	TAZ
Connecticut	09001	83500	SOUTH WESTERN	0901	TAZ
Connecticut	09001	86370	SOUTH WESTERN	0901	TAZ
Connecticut	09011	06820	SOUTHEASTERN	0913	TAZ
Connecticut	09011	15910	SOUTHEASTERN	0913	TAZ
Connecticut	09011	23400	SOUTHEASTERN	0913	TAZ
Connecticut	09011	29910	SOUTHEASTERN	0913	TAZ
Connecticut	09011	33900	SOUTHEASTERN	0913	TAZ
Connecticut	09011	34250	SOUTHEASTERN	0913	TAZ
Connecticut	09011	42600	SOUTHEASTERN	0913	TAZ
Connecticut	09011	43230	SOUTHEASTERN	0913	TAZ
Connecticut	09011	48900	SOUTHEASTERN	0913	TAZ
Connecticut	09011	52350	SOUTHEASTERN	0913	TAZ
Connecticut	09011	55500	SOUTHEASTERN	0913	TAZ
Connecticut	09011	56270	SOUTHEASTERN	0913	TAZ
Connecticut	09011	62150	SOUTHEASTERN	0913	TAZ
Connecticut	09011	66210	SOUTHEASTERN	0913	TAZ
Connecticut	09011	71670	SOUTHEASTERN	0913	TAZ
Connecticut	09011	73770	SOUTHEASTERN	0913	TAZ
Connecticut	09011	78600	SOUTHEASTERN	0913	TAZ
Connecticut	09011	80280	SOUTHEASTERN	0913	TAZ
Connecticut	09013	72090	UNDEFINED TOWNS	0916	TAZ
Connecticut	09001	68170	VALLEY	0906	TAZ
Connecticut	09009	01220	VALLEY	0906	TAZ
Connecticut	09009	19550	VALLEY	0906	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Connecticut	09009	67610	VALLEY	0906	TAZ
Connecticut	09011	42390	WINDHAM	0914	TAZ
Connecticut	09013	16400	WINDHAM	0914	TAZ
Connecticut	09013	17800	WINDHAM	0914	TAZ
Connecticut	09013	44910	WINDHAM	0914	TAZ
Connecticut	09013	85950	WINDHAM	0914	TAZ
Connecticut	09015	01430	WINDHAM	0914	TAZ
Connecticut	09015	13810	WINDHAM	0914	TAZ
Connecticut	09015	36000	WINDHAM	0914	TAZ
Connecticut	09015	67400	WINDHAM	0914	TAZ
Connecticut	09015	86790	WINDHAM	0914	TAZ
Maine	23001	02060	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	19105	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	29255	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	38565	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	38740	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	40035	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	40665	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	40770	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	44585	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	46160	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	60020	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	64570	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	77800	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23001	79585	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23005	08430	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23005	26525	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23005	48820	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23005	60685	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23011	40175	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23011	46405	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23011	80880	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23011	86970	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23023	03355	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23023	06260	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23023	76960	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23023	81930	Androscoggin Transportation Resource Center	4241	TAZ
Maine	23019	02795	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	06680	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	06925	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	22535	Bangor Area Comprehensive Transportation Study	0731	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Maine	23019	27645	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	30795	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	32510	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	33490	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	45670	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	55225	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	55565	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	55680	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	57937	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23019	78780	Bangor Area Comprehensive Transportation Study	0731	TAZ
Maine	23031	00275	Central Transportation Planning	1126	TAZ
Maine	23031	00730	Central Transportation Planning	1126	TAZ
Maine	23031	01605	Central Transportation Planning	1126	TAZ
Maine	23031	04720	Central Transportation Planning	1126	TAZ
Maine	23031	04860	Central Transportation Planning	1126	TAZ
Maine	23031	09410	Central Transportation Planning	1126	TAZ
Maine	23031	14485	Central Transportation Planning	1126	TAZ
Maine	23031	16725	Central Transportation Planning	1126	TAZ
Maine	23031	22955	Central Transportation Planning	1126	TAZ
Maine	23031	33665	Central Transportation Planning	1126	TAZ
Maine	23031	36535	Central Transportation Planning	1126	TAZ
Maine	23031	36745	Central Transportation Planning	1126	TAZ
Maine	23031	37270	Central Transportation Planning	1126	TAZ
Maine	23031	38425	Central Transportation Planning	1126	TAZ
Maine	23031	39195	Central Transportation Planning	1126	TAZ
Maine	23031	39405	Central Transportation Planning	1126	TAZ
Maine	23031	41750	Central Transportation Planning	1126	TAZ
Maine	23031	48750	Central Transportation Planning	1126	TAZ
Maine	23031	50325	Central Transportation Planning	1126	TAZ
Maine	23031	54980	Central Transportation Planning	1126	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Maine	23031	55085	Central Transportation Planning	1126	TAZ
Maine	23031	56870	Central Transportation Planning	1126	TAZ
Maine	23031	64675	Central Transportation Planning	1126	TAZ
Maine	23031	65760	Central Transportation Planning	1126	TAZ
Maine	23031	67475	Central Transportation Planning	1126	TAZ
Maine	23031	70030	Central Transportation Planning	1126	TAZ
Maine	23031	80530	Central Transportation Planning	1126	TAZ
Maine	23031	81475	Central Transportation Planning	1126	TAZ
Maine	23031	87985	Central Transportation Planning	1126	TAZ
Maine	23001	19105	Greater Portland COG	6401	Tract
Maine	23005	08430	Greater Portland COG	6401	BG
Maine	23005	10180	Greater Portland COG	6401	TAZ
Maine	23005	15430	Greater Portland COG	6401	TAZ
Maine	23005	24495	Greater Portland COG	6401	TAZ
Maine	23005	26525	Greater Portland COG	6401	BG
Maine	23005	28240	Greater Portland COG	6401	TAZ
Maine	23005	28870	Greater Portland COG	6401	Tract
Maine	23005	31390	Greater Portland COG	6401	Tract
Maine	23005	41067	Greater Portland COG	6401	Tract
Maine	23005	48820	Greater Portland COG	6401	Tract
Maine	23005	53860	Greater Portland COG	6401	BG
Maine	23005	60545	Greater Portland COG	6401	TAZ
Maine	23005	60685	Greater Portland COG	6401	Tract
Maine	23005	61945	Greater Portland COG	6401	Tract
Maine	23005	66145	Greater Portland COG	6401	TAZ
Maine	23005	71990	Greater Portland COG	6401	TAZ
Maine	23005	73670	Greater Portland COG	6401	TAZ
Maine	23005	82105	Greater Portland COG	6401	TAZ
Maine	23005	86025	Greater Portland COG	6401	TAZ
Maine	23005	87845	Greater Portland COG	6401	TAZ
Maine	23023	03355	Greater Portland COG	6401	Tract
Maine	23023	76960	Greater Portland COG	6401	Tract
Maine	23023	81930	Greater Portland COG	6401	Tract
Maine	23031	00730	Greater Portland COG	6401	Tract
Maine	23031	01605	Greater Portland COG	6401	Tract
Maine	23031	04860	Greater Portland COG	6401	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Maine	23031	09410	Greater Portland COG	6401	TAZ
Maine	23031	16725	Greater Portland COG	6401	Tract
Maine	23031	33665	Greater Portland COG	6401	TAZ
Maine	23031	36535	Greater Portland COG	6401	Tract
Maine	23031	36745	Greater Portland COG	6401	Tract
Maine	23031	41750	Greater Portland COG	6401	TAZ
Maine	23031	55085	Greater Portland COG	6401	BG
Maine	23031	64675	Greater Portland COG	6401	BG
Maine	23031	65760	Greater Portland COG	6401	Tract
Maine	23031	00275	Sea Coast MPO	6451	TAZ
Maine	23031	00730	Sea Coast MPO	6451	TAZ
Maine	23031	01605	Sea Coast MPO	6451	TAZ
Maine	23031	04720	Sea Coast MPO	6451	TAZ
Maine	23031	04860	Sea Coast MPO	6451	TAZ
Maine	23031	09410	Sea Coast MPO	6451	TAZ
Maine	23031	14485	Sea Coast MPO	6451	TAZ
Maine	23031	16725	Sea Coast MPO	6451	TAZ
Maine	23031	22955	Sea Coast MPO	6451	TAZ
Maine	23031	33665	Sea Coast MPO	6451	TAZ
Maine	23031	36535	Sea Coast MPO	6451	TAZ
Maine	23031	36745	Sea Coast MPO	6451	TAZ
Maine	23031	37270	Sea Coast MPO	6451	TAZ
Maine	23031	38425	Sea Coast MPO	6451	TAZ
Maine	23031	39195	Sea Coast MPO	6451	TAZ
Maine	23031	39405	Sea Coast MPO	6451	TAZ
Maine	23031	41750	Sea Coast MPO	6451	TAZ
Maine	23031	48750	Sea Coast MPO	6451	TAZ
Maine	23031	50325	Sea Coast MPO	6451	TAZ
Maine	23031	54980	Sea Coast MPO	6451	TAZ
Maine	23031	55085	Sea Coast MPO	6451	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Maine	23031	56870	Sea Coast MPO	6451	TAZ
Maine	23031	64675	Sea Coast MPO	6451	TAZ
Maine	23031	65760	Sea Coast MPO	6451	TAZ
Maine	23031	67475	Sea Coast MPO	6451	TAZ
Maine	23031	70030	Sea Coast MPO	6451	TAZ
Maine	23031	80530	Sea Coast MPO	6451	TAZ
Maine	23031	81475	Sea Coast MPO	6451	TAZ
Maine	23031	87985	Sea Coast MPO	6451	TAZ
Maine	23005	02655	Southern Maine RPC	7471	TAZ
Maine	23017	08150	Southern Maine RPC	7471	TAZ
Maine	23017	17250	Southern Maine RPC	7471	TAZ
Maine	23017	26910	Southern Maine RPC	7471	TAZ
Maine	23017	33315	Southern Maine RPC	7471	TAZ
Maine	23017	41365	Southern Maine RPC	7471	TAZ
Maine	23017	60405	Southern Maine RPC	7471	TAZ
Maine	23017	74510	Southern Maine RPC	7471	TAZ
Maine	23017	74685	Southern Maine RPC	7471	TAZ
Maine	23017	75595	Southern Maine RPC	7471	TAZ
Maine	23031	00275	Southern Maine RPC	7471	TAZ
Maine	23031	00730	Southern Maine RPC	7471	TAZ
Maine	23031	01605	Southern Maine RPC	7471	TAZ
Maine	23031	04720	Southern Maine RPC	7471	TAZ
Maine	23031	04860	Southern Maine RPC	7471	TAZ
Maine	23031	09410	Southern Maine RPC	7471	TAZ
Maine	23031	14485	Southern Maine RPC	7471	TAZ
Maine	23031	16725	Southern Maine RPC	7471	TAZ
Maine	23031	22955	Southern Maine RPC	7471	TAZ
Maine	23031	33665	Southern Maine RPC	7471	TAZ
Maine	23031	36535	Southern Maine RPC	7471	TAZ
Maine	23031	36745	Southern Maine RPC	7471	TAZ
Maine	23031	37270	Southern Maine RPC	7471	TAZ
Maine	23031	38425	Southern Maine RPC	7471	TAZ
Maine	23031	39195	Southern Maine RPC	7471	TAZ
Maine	23031	39405	Southern Maine RPC	7471	TAZ
Maine	23031	41750	Southern Maine RPC	7471	TAZ
Maine	23031	48750	Southern Maine RPC	7471	TAZ
Maine	23031	50325	Southern Maine RPC	7471	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Maine	23031	54980	Southern Maine RPC	7471	TAZ
Maine	23031	55085	Southern Maine RPC	7471	TAZ
Maine	23031	56870	Southern Maine RPC	7471	TAZ
Maine	23031	64675	Southern Maine RPC	7471	TAZ
Maine	23031	65760	Southern Maine RPC	7471	TAZ
Maine	23031	67475	Southern Maine RPC	7471	TAZ
Maine	23031	70030	Southern Maine RPC	7471	TAZ
Maine	23031	80530	Southern Maine RPC	7471	TAZ
Maine	23031	81475	Southern Maine RPC	7471	TAZ
Maine	23031	87985	Southern Maine RPC	7471	TAZ
Massachusetts	25003	00555	Berkshire County RPC	6321	TAZ
Massachusetts	25003	00975	Berkshire County RPC	6321	TAZ
Massachusetts	25003	04545	Berkshire County RPC	6321	TAZ
Massachusetts	25003	13345	Berkshire County RPC	6321	TAZ
Massachusetts	25003	14010	Berkshire County RPC	6321	TAZ
Massachusetts	25003	16180	Berkshire County RPC	6321	TAZ
Massachusetts	25003	21360	Berkshire County RPC	6321	TAZ
Massachusetts	25003	24120	Berkshire County RPC	6321	TAZ
Massachusetts	25003	26815	Berkshire County RPC	6321	TAZ
Massachusetts	25003	28180	Berkshire County RPC	6321	TAZ
Massachusetts	25003	30315	Berkshire County RPC	6321	TAZ
Massachusetts	25003	34340	Berkshire County RPC	6321	TAZ
Massachusetts	25003	34655	Berkshire County RPC	6321	TAZ
Massachusetts	25003	34970	Berkshire County RPC	6321	TAZ
Massachusetts	25003	42460	Berkshire County RPC	6321	TAZ
Massachusetts	25003	43300	Berkshire County RPC	6321	TAZ
Massachusetts	25003	44385	Berkshire County RPC	6321	TAZ
Massachusetts	25003	45420	Berkshire County RPC	6321	TAZ
Massachusetts	25003	46225	Berkshire County RPC	6321	TAZ
Massachusetts	25003	51580	Berkshire County RPC	6321	TAZ
Massachusetts	25003	53050	Berkshire County RPC	6321	TAZ
Massachusetts	25003	53960	Berkshire County RPC	6321	TAZ
Massachusetts	25003	56795	Berkshire County RPC	6321	TAZ
Massachusetts	25003	59665	Berkshire County RPC	6321	TAZ
Massachusetts	25003	60225	Berkshire County RPC	6321	TAZ
Massachusetts	25003	61065	Berkshire County RPC	6321	TAZ
Massachusetts	25003	67595	Berkshire County RPC	6321	TAZ
Massachusetts	25003	71095	Berkshire County RPC	6321	TAZ
Massachusetts	25003	73335	Berkshire County RPC	6321	TAZ
Massachusetts	25003	77990	Berkshire County RPC	6321	TAZ
Massachusetts	25003	79985	Berkshire County RPC	6321	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25003	80685	Berkshire County RPC	6321	TAZ
Massachusetts	25009	05595	Boston MPO	1121	BG
Massachusetts	25009	16250	Boston MPO	1121	BG
Massachusetts	25009	21850	Boston MPO	1121	BG
Massachusetts	25009	26150	Boston MPO	1121	BG
Massachusetts	25009	27900	Boston MPO	1121	BG
Massachusetts	25009	32310	Boston MPO	1121	BG
Massachusetts	25009	37490	Boston MPO	1121	BG
Massachusetts	25009	37560	Boston MPO	1121	BG
Massachusetts	25009	37995	Boston MPO	1121	BG
Massachusetts	25009	38400	Boston MPO	1121	BG
Massachusetts	25009	41095	Boston MPO	1121	BG
Massachusetts	25009	43580	Boston MPO	1121	BG
Massachusetts	25009	52490	Boston MPO	1121	BG
Massachusetts	25009	57880	Boston MPO	1121	BG
Massachusetts	25009	59105	Boston MPO	1121	BG
Massachusetts	25009	60015	Boston MPO	1121	BG
Massachusetts	25009	68645	Boston MPO	1121	BG
Massachusetts	25009	70150	Boston MPO	1121	BG
Massachusetts	25009	74595	Boston MPO	1121	BG
Massachusetts	25017	00380	Boston MPO	1121	BG
Massachusetts	25017	01605	Boston MPO	1121	BG
Massachusetts	25017	02130	Boston MPO	1121	BG
Massachusetts	25017	04615	Boston MPO	1121	BG
Massachusetts	25017	05070	Boston MPO	1121	BG
Massachusetts	25017	07350	Boston MPO	1121	BG
Massachusetts	25017	09840	Boston MPO	1121	BG
Massachusetts	25017	11000	Boston MPO	1121	BG
Massachusetts	25017	11525	Boston MPO	1121	BG
Massachusetts	25017	15060	Boston MPO	1121	BG
Massachusetts	25017	21990	Boston MPO	1121	BG
Massachusetts	25017	24925	Boston MPO	1121	BG
Massachusetts	25017	30700	Boston MPO	1121	BG
Massachusetts	25017	31085	Boston MPO	1121	BG
Massachusetts	25017	31540	Boston MPO	1121	BG
Massachusetts	25017	35215	Boston MPO	1121	BG
Massachusetts	25017	35425	Boston MPO	1121	BG
Massachusetts	25017	35950	Boston MPO	1121	BG
Massachusetts	25017	37875	Boston MPO	1121	BG
Massachusetts	25017	38715	Boston MPO	1121	BG
Massachusetts	25017	39625	Boston MPO	1121	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25017	39835	Boston MPO	1121	BG
Massachusetts	25017	40115	Boston MPO	1121	BG
Massachusetts	25017	43895	Boston MPO	1121	BG
Massachusetts	25017	45560	Boston MPO	1121	BG
Massachusetts	25017	48955	Boston MPO	1121	BG
Massachusetts	25017	56130	Boston MPO	1121	BG
Massachusetts	25017	61380	Boston MPO	1121	BG
Massachusetts	25017	62535	Boston MPO	1121	BG
Massachusetts	25017	67665	Boston MPO	1121	BG
Massachusetts	25017	68050	Boston MPO	1121	BG
Massachusetts	25017	68260	Boston MPO	1121	BG
Massachusetts	25017	72215	Boston MPO	1121	BG
Massachusetts	25017	72600	Boston MPO	1121	BG
Massachusetts	25017	73440	Boston MPO	1121	BG
Massachusetts	25017	73790	Boston MPO	1121	BG
Massachusetts	25017	77255	Boston MPO	1121	BG
Massachusetts	25017	80230	Boston MPO	1121	BG
Massachusetts	25017	80510	Boston MPO	1121	BG
Massachusetts	25017	81035	Boston MPO	1121	BG
Massachusetts	25021	04930	Boston MPO	1121	BG
Massachusetts	25021	07665	Boston MPO	1121	BG
Massachusetts	25021	09175	Boston MPO	1121	BG
Massachusetts	25021	11315	Boston MPO	1121	BG
Massachusetts	25021	14640	Boston MPO	1121	BG
Massachusetts	25021	16495	Boston MPO	1121	BG
Massachusetts	25021	17405	Boston MPO	1121	BG
Massachusetts	25021	24820	Boston MPO	1121	BG
Massachusetts	25021	25100	Boston MPO	1121	BG
Massachusetts	25021	30455	Boston MPO	1121	BG
Massachusetts	25021	39765	Boston MPO	1121	BG
Massachusetts	25021	39975	Boston MPO	1121	BG
Massachusetts	25021	41515	Boston MPO	1121	BG
Massachusetts	25021	41690	Boston MPO	1121	BG
Massachusetts	25021	44105	Boston MPO	1121	BG
Massachusetts	25021	46050	Boston MPO	1121	BG
Massachusetts	25021	50250	Boston MPO	1121	BG
Massachusetts	25021	55745	Boston MPO	1121	BG
Massachusetts	25021	55955	Boston MPO	1121	BG
Massachusetts	25021	60785	Boston MPO	1121	BG
Massachusetts	25021	67945	Boston MPO	1121	BG
Massachusetts	25021	72495	Boston MPO	1121	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25021	74175	Boston MPO	1121	BG
Massachusetts	25021	78690	Boston MPO	1121	BG
Massachusetts	25021	78865	Boston MPO	1121	BG
Massachusetts	25021	82315	Boston MPO	1121	BG
Massachusetts	25023	17895	Boston MPO	1121	BG
Massachusetts	25023	28285	Boston MPO	1121	BG
Massachusetts	25023	30210	Boston MPO	1121	BG
Massachusetts	25023	31645	Boston MPO	1121	BG
Massachusetts	25023	38855	Boston MPO	1121	BG
Massachusetts	25023	50145	Boston MPO	1121	BG
Massachusetts	25023	57775	Boston MPO	1121	BG
Massachusetts	25023	60330	Boston MPO	1121	BG
Massachusetts	25025	07000	Boston MPO	1121	BG
Massachusetts	25025	13205	Boston MPO	1121	BG
Massachusetts	25025	56585	Boston MPO	1121	BG
Massachusetts	25025	80930	Boston MPO	1121	BG
Massachusetts	25027	06365	Boston MPO	1121	BG
Massachusetts	25027	41165	Boston MPO	1121	BG
Massachusetts	25027	63165	Boston MPO	1121	BG
Massachusetts	25001	03600	Cape Cod Commission	0741	BG
Massachusetts	25001	07175	Cape Cod Commission	0741	BG
Massachusetts	25001	07980	Cape Cod Commission	0741	BG
Massachusetts	25001	12995	Cape Cod Commission	0741	BG
Massachusetts	25001	16775	Cape Cod Commission	0741	BG
Massachusetts	25001	19295	Cape Cod Commission	0741	BG
Massachusetts	25001	23105	Cape Cod Commission	0741	BG
Massachusetts	25001	29020	Cape Cod Commission	0741	BG
Massachusetts	25001	39100	Cape Cod Commission	0741	BG
Massachusetts	25001	51440	Cape Cod Commission	0741	BG
Massachusetts	25001	55500	Cape Cod Commission	0741	BG
Massachusetts	25001	59735	Cape Cod Commission	0741	BG
Massachusetts	25001	70605	Cape Cod Commission	0741	BG
Massachusetts	25001	74385	Cape Cod Commission	0741	BG
Massachusetts	25001	82525	Cape Cod Commission	0741	BG
Massachusetts	25027	02760	Central Massachusetts RPC	9241	BG
Massachusetts	25027	03740	Central Massachusetts RPC	9241	BG
Massachusetts	25027	05490	Central Massachusetts RPC	9241	BG
Massachusetts	25027	06015	Central Massachusetts RPC	9241	BG
Massachusetts	25027	07525	Central Massachusetts RPC	9241	BG
Massachusetts	25027	09105	Central Massachusetts RPC	9241	BG
Massachusetts	25027	12715	Central Massachusetts RPC	9241	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25027	17300	Central Massachusetts RPC	9241	BG
Massachusetts	25027	17685	Central Massachusetts RPC	9241	BG
Massachusetts	25027	18560	Central Massachusetts RPC	9241	BG
Massachusetts	25027	26430	Central Massachusetts RPC	9241	BG
Massachusetts	25027	28740	Central Massachusetts RPC	9241	BG
Massachusetts	25027	30560	Central Massachusetts RPC	9241	BG
Massachusetts	25027	30945	Central Massachusetts RPC	9241	BG
Massachusetts	25027	34795	Central Massachusetts RPC	9241	BG
Massachusetts	25027	40255	Central Massachusetts RPC	9241	BG
Massachusetts	25027	41340	Central Massachusetts RPC	9241	BG
Massachusetts	25027	41585	Central Massachusetts RPC	9241	BG
Massachusetts	25027	45105	Central Massachusetts RPC	9241	BG
Massachusetts	25027	46820	Central Massachusetts RPC	9241	BG
Massachusetts	25027	46925	Central Massachusetts RPC	9241	BG
Massachusetts	25027	47135	Central Massachusetts RPC	9241	BG
Massachusetts	25027	50670	Central Massachusetts RPC	9241	BG
Massachusetts	25027	51825	Central Massachusetts RPC	9241	BG
Massachusetts	25027	52420	Central Massachusetts RPC	9241	BG
Massachusetts	25027	55395	Central Massachusetts RPC	9241	BG
Massachusetts	25027	58825	Central Massachusetts RPC	9241	BG
Massachusetts	25027	61800	Central Massachusetts RPC	9241	BG
Massachusetts	25027	63270	Central Massachusetts RPC	9241	BG
Massachusetts	25027	66105	Central Massachusetts RPC	9241	BG
Massachusetts	25027	68155	Central Massachusetts RPC	9241	BG
Massachusetts	25027	68610	Central Massachusetts RPC	9241	BG
Massachusetts	25027	71480	Central Massachusetts RPC	9241	BG
Massachusetts	25027	71620	Central Massachusetts RPC	9241	BG
Massachusetts	25027	73090	Central Massachusetts RPC	9241	BG
Massachusetts	25027	73895	Central Massachusetts RPC	9241	BG
Massachusetts	25027	75015	Central Massachusetts RPC	9241	BG
Massachusetts	25027	75155	Central Massachusetts RPC	9241	BG
Massachusetts	25027	75400	Central Massachusetts RPC	9241	BG
Massachusetts	25027	82000	Central Massachusetts RPC	9241	BG
Massachusetts	25001	03600	Central Transportation Planning	1126	BG
Massachusetts	25001	07175	Central Transportation Planning	1126	BG
Massachusetts	25001	07980	Central Transportation Planning	1126	BG
Massachusetts	25001	12995	Central Transportation Planning	1126	BG
Massachusetts	25001	16775	Central Transportation Planning	1126	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25001	19295	Central Transportation Planning	1126	BG
Massachusetts	25001	23105	Central Transportation Planning	1126	BG
Massachusetts	25001	29020	Central Transportation Planning	1126	BG
Massachusetts	25001	39100	Central Transportation Planning	1126	BG
Massachusetts	25001	51440	Central Transportation Planning	1126	BG
Massachusetts	25001	55500	Central Transportation Planning	1126	BG
Massachusetts	25001	59735	Central Transportation Planning	1126	BG
Massachusetts	25001	70605	Central Transportation Planning	1126	BG
Massachusetts	25001	74385	Central Transportation Planning	1126	BG
Massachusetts	25001	82525	Central Transportation Planning	1126	BG
Massachusetts	25005	00520	Central Transportation Planning	1126	BG
Massachusetts	25005	02690	Central Transportation Planning	1126	BG
Massachusetts	25005	05280	Central Transportation Planning	1126	BG
Massachusetts	25005	16425	Central Transportation Planning	1126	BG
Massachusetts	25005	16950	Central Transportation Planning	1126	BG
Massachusetts	25005	20100	Central Transportation Planning	1126	BG
Massachusetts	25005	22130	Central Transportation Planning	1126	BG
Massachusetts	25005	23000	Central Transportation Planning	1126	BG
Massachusetts	25005	25240	Central Transportation Planning	1126	BG
Massachusetts	25005	38225	Central Transportation Planning	1126	BG
Massachusetts	25005	45000	Central Transportation Planning	1126	BG
Massachusetts	25005	46575	Central Transportation Planning	1126	BG
Massachusetts	25005	49970	Central Transportation Planning	1126	BG
Massachusetts	25005	56060	Central Transportation Planning	1126	BG
Massachusetts	25005	56375	Central Transportation Planning	1126	BG
Massachusetts	25005	60645	Central Transportation Planning	1126	BG
Massachusetts	25005	62430	Central Transportation Planning	1126	BG
Massachusetts	25005	68750	Central Transportation Planning	1126	BG
Massachusetts	25005	69170	Central Transportation Planning	1126	BG
Massachusetts	25005	77570	Central Transportation Planning	1126	BG
Massachusetts	25007	01585	Central Transportation Planning	1126	BG
Massachusetts	25007	13800	Central Transportation Planning	1126	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25007	21150	Central Transportation Planning	1126	BG
Massachusetts	25007	26325	Central Transportation Planning	1126	BG
Massachusetts	25007	50390	Central Transportation Planning	1126	BG
Massachusetts	25007	69940	Central Transportation Planning	1126	BG
Massachusetts	25007	78235	Central Transportation Planning	1126	BG
Massachusetts	25009	01185	Central Transportation Planning	1126	BG
Massachusetts	25009	01465	Central Transportation Planning	1126	BG
Massachusetts	25009	05595	Central Transportation Planning	1126	BG
Massachusetts	25009	07420	Central Transportation Planning	1126	BG
Massachusetts	25009	16250	Central Transportation Planning	1126	BG
Massachusetts	25009	21850	Central Transportation Planning	1126	BG
Massachusetts	25009	25625	Central Transportation Planning	1126	BG
Massachusetts	25009	26150	Central Transportation Planning	1126	BG
Massachusetts	25009	27620	Central Transportation Planning	1126	BG
Massachusetts	25009	27900	Central Transportation Planning	1126	BG
Massachusetts	25009	29405	Central Transportation Planning	1126	BG
Massachusetts	25009	32310	Central Transportation Planning	1126	BG
Massachusetts	25009	34550	Central Transportation Planning	1126	BG
Massachusetts	25009	37490	Central Transportation Planning	1126	BG
Massachusetts	25009	37560	Central Transportation Planning	1126	BG
Massachusetts	25009	37995	Central Transportation Planning	1126	BG
Massachusetts	25009	38400	Central Transportation Planning	1126	BG
Massachusetts	25009	40430	Central Transportation Planning	1126	BG
Massachusetts	25009	40710	Central Transportation Planning	1126	BG
Massachusetts	25009	41095	Central Transportation Planning	1126	BG
Massachusetts	25009	43580	Central Transportation Planning	1126	BG
Massachusetts	25009	45175	Central Transportation Planning	1126	BG
Massachusetts	25009	45245	Central Transportation Planning	1126	BG
Massachusetts	25009	46365	Central Transportation Planning	1126	BG
Massachusetts	25009	52490	Central Transportation Planning	1126	BG
Massachusetts	25009	57880	Central Transportation Planning	1126	BG
Massachusetts	25009	58405	Central Transportation Planning	1126	BG
Massachusetts	25009	59105	Central Transportation Planning	1126	BG
Massachusetts	25009	59245	Central Transportation Planning	1126	BG
Massachusetts	25009	60015	Central Transportation Planning	1126	BG
Massachusetts	25009	68645	Central Transportation Planning	1126	BG
Massachusetts	25009	70150	Central Transportation Planning	1126	BG
Massachusetts	25009	74595	Central Transportation Planning	1126	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25009	77150	Central Transportation Planning	1126	BG
Massachusetts	25017	00380	Central Transportation Planning	1126	BG
Massachusetts	25017	01605	Central Transportation Planning	1126	BG
Massachusetts	25017	01955	Central Transportation Planning	1126	BG
Massachusetts	25017	02130	Central Transportation Planning	1126	BG
Massachusetts	25017	03005	Central Transportation Planning	1126	BG
Massachusetts	25017	04615	Central Transportation Planning	1126	BG
Massachusetts	25017	05070	Central Transportation Planning	1126	BG
Massachusetts	25017	05805	Central Transportation Planning	1126	BG
Massachusetts	25017	07350	Central Transportation Planning	1126	BG
Massachusetts	25017	09840	Central Transportation Planning	1126	BG
Massachusetts	25017	11000	Central Transportation Planning	1126	BG
Massachusetts	25017	11525	Central Transportation Planning	1126	BG
Massachusetts	25017	13135	Central Transportation Planning	1126	BG
Massachusetts	25017	15060	Central Transportation Planning	1126	BG
Massachusetts	25017	17475	Central Transportation Planning	1126	BG
Massachusetts	25017	17825	Central Transportation Planning	1126	BG
Massachusetts	25017	21990	Central Transportation Planning	1126	BG
Massachusetts	25017	24925	Central Transportation Planning	1126	BG
Massachusetts	25017	27480	Central Transportation Planning	1126	BG
Massachusetts	25017	30360	Central Transportation Planning	1126	BG
Massachusetts	25017	30700	Central Transportation Planning	1126	BG
Massachusetts	25017	31085	Central Transportation Planning	1126	BG
Massachusetts	25017	31540	Central Transportation Planning	1126	BG
Massachusetts	25017	35215	Central Transportation Planning	1126	BG
Massachusetts	25017	35425	Central Transportation Planning	1126	BG
Massachusetts	25017	35950	Central Transportation Planning	1126	BG
Massachusetts	25017	37000	Central Transportation Planning	1126	BG
Massachusetts	25017	37875	Central Transportation Planning	1126	BG
Massachusetts	25017	38715	Central Transportation Planning	1126	BG
Massachusetts	25017	39625	Central Transportation Planning	1126	BG
Massachusetts	25017	39835	Central Transportation Planning	1126	BG
Massachusetts	25017	40115	Central Transportation Planning	1126	BG
Massachusetts	25017	43895	Central Transportation Planning	1126	BG
Massachusetts	25017	45560	Central Transportation Planning	1126	BG
Massachusetts	25017	48955	Central Transportation Planning	1126	BG
Massachusetts	25017	52805	Central Transportation Planning	1126	BG
Massachusetts	25017	56130	Central Transportation Planning	1126	BG
Massachusetts	25017	61380	Central Transportation Planning	1126	BG
Massachusetts	25017	61590	Central Transportation Planning	1126	BG
Massachusetts	25017	62535	Central Transportation Planning	1126	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25017	67665	Central Transportation Planning	1126	BG
Massachusetts	25017	68050	Central Transportation Planning	1126	BG
Massachusetts	25017	68260	Central Transportation Planning	1126	BG
Massachusetts	25017	69415	Central Transportation Planning	1126	BG
Massachusetts	25017	71025	Central Transportation Planning	1126	BG
Massachusetts	25017	72215	Central Transportation Planning	1126	BG
Massachusetts	25017	72600	Central Transportation Planning	1126	BG
Massachusetts	25017	73440	Central Transportation Planning	1126	BG
Massachusetts	25017	73790	Central Transportation Planning	1126	BG
Massachusetts	25017	76135	Central Transportation Planning	1126	BG
Massachusetts	25017	77255	Central Transportation Planning	1126	BG
Massachusetts	25017	80230	Central Transportation Planning	1126	BG
Massachusetts	25017	80510	Central Transportation Planning	1126	BG
Massachusetts	25017	81035	Central Transportation Planning	1126	BG
Massachusetts	25019	43790	Central Transportation Planning	1126	BG
Massachusetts	25021	02935	Central Transportation Planning	1126	BG
Massachusetts	25021	04930	Central Transportation Planning	1126	BG
Massachusetts	25021	07665	Central Transportation Planning	1126	BG
Massachusetts	25021	09175	Central Transportation Planning	1126	BG
Massachusetts	25021	11315	Central Transportation Planning	1126	BG
Massachusetts	25021	14640	Central Transportation Planning	1126	BG
Massachusetts	25021	16495	Central Transportation Planning	1126	BG
Massachusetts	25021	17405	Central Transportation Planning	1126	BG
Massachusetts	25021	24820	Central Transportation Planning	1126	BG
Massachusetts	25021	25100	Central Transportation Planning	1126	BG
Massachusetts	25021	30455	Central Transportation Planning	1126	BG
Massachusetts	25021	39765	Central Transportation Planning	1126	BG
Massachusetts	25021	39975	Central Transportation Planning	1126	BG
Massachusetts	25021	41515	Central Transportation Planning	1126	BG
Massachusetts	25021	41690	Central Transportation Planning	1126	BG
Massachusetts	25021	44105	Central Transportation Planning	1126	BG
Massachusetts	25021	46050	Central Transportation Planning	1126	BG
Massachusetts	25021	50250	Central Transportation Planning	1126	BG
Massachusetts	25021	54100	Central Transportation Planning	1126	BG
Massachusetts	25021	55745	Central Transportation Planning	1126	BG
Massachusetts	25021	55955	Central Transportation Planning	1126	BG
Massachusetts	25021	60785	Central Transportation Planning	1126	BG
Massachusetts	25021	67945	Central Transportation Planning	1126	BG
Massachusetts	25021	72495	Central Transportation Planning	1126	BG
Massachusetts	25021	74175	Central Transportation Planning	1126	BG
Massachusetts	25021	78690	Central Transportation Planning	1126	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25021	78865	Central Transportation Planning	1126	BG
Massachusetts	25021	82315	Central Transportation Planning	1126	BG
Massachusetts	25023	00170	Central Transportation Planning	1126	BG
Massachusetts	25023	08085	Central Transportation Planning	1126	BG
Massachusetts	25023	09000	Central Transportation Planning	1126	BG
Massachusetts	25023	11665	Central Transportation Planning	1126	BG
Massachusetts	25023	17895	Central Transportation Planning	1126	BG
Massachusetts	25023	18455	Central Transportation Planning	1126	BG
Massachusetts	25023	27795	Central Transportation Planning	1126	BG
Massachusetts	25023	28285	Central Transportation Planning	1126	BG
Massachusetts	25023	28495	Central Transportation Planning	1126	BG
Massachusetts	25023	30210	Central Transportation Planning	1126	BG
Massachusetts	25023	31645	Central Transportation Planning	1126	BG
Massachusetts	25023	33220	Central Transportation Planning	1126	BG
Massachusetts	25023	33920	Central Transportation Planning	1126	BG
Massachusetts	25023	38540	Central Transportation Planning	1126	BG
Massachusetts	25023	38855	Central Transportation Planning	1126	BG
Massachusetts	25023	39450	Central Transportation Planning	1126	BG
Massachusetts	25023	40850	Central Transportation Planning	1126	BG
Massachusetts	25023	50145	Central Transportation Planning	1126	BG
Massachusetts	25023	52630	Central Transportation Planning	1126	BG
Massachusetts	25023	54310	Central Transportation Planning	1126	BG
Massachusetts	25023	54415	Central Transportation Planning	1126	BG
Massachusetts	25023	57600	Central Transportation Planning	1126	BG
Massachusetts	25023	57775	Central Transportation Planning	1126	BG
Massachusetts	25023	60330	Central Transportation Planning	1126	BG
Massachusetts	25023	27985	Central Transportation Planning	1126	BG
Massachusetts	25023	75260	Central Transportation Planning	1126	BG
Massachusetts	25023	79530	Central Transportation Planning	1126	BG
Massachusetts	25025	07000	Central Transportation Planning	1126	BG
Massachusetts	25025	13205	Central Transportation Planning	1126	BG
Massachusetts	25025	56585	Central Transportation Planning	1126	BG
Massachusetts	25025	80930	Central Transportation Planning	1126	BG
Massachusetts	25027	01885	Central Transportation Planning	1126	BG
Massachusetts	25027	02480	Central Transportation Planning	1126	BG
Massachusetts	25027	02760	Central Transportation Planning	1126	BG
Massachusetts	25027	03740	Central Transportation Planning	1126	BG
Massachusetts	25027	05490	Central Transportation Planning	1126	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25027	06015	Central Transportation Planning	1126	BG
Massachusetts	25027	06365	Central Transportation Planning	1126	BG
Massachusetts	25027	07525	Central Transportation Planning	1126	BG
Massachusetts	25027	09105	Central Transportation Planning	1126	BG
Massachusetts	25027	12715	Central Transportation Planning	1126	BG
Massachusetts	25027	14395	Central Transportation Planning	1126	BG
Massachusetts	25027	17300	Central Transportation Planning	1126	BG
Massachusetts	25027	17685	Central Transportation Planning	1126	BG
Massachusetts	25027	18560	Central Transportation Planning	1126	BG
Massachusetts	25027	23875	Central Transportation Planning	1126	BG
Massachusetts	25027	25485	Central Transportation Planning	1126	BG
Massachusetts	25027	26430	Central Transportation Planning	1126	BG
Massachusetts	25027	28740	Central Transportation Planning	1126	BG
Massachusetts	25027	28950	Central Transportation Planning	1126	BG
Massachusetts	25027	30560	Central Transportation Planning	1126	BG
Massachusetts	25027	30945	Central Transportation Planning	1126	BG
Massachusetts	25027	31435	Central Transportation Planning	1126	BG
Massachusetts	25027	34165	Central Transportation Planning	1126	BG
Massachusetts	25027	34795	Central Transportation Planning	1126	BG
Massachusetts	25027	35075	Central Transportation Planning	1126	BG
Massachusetts	25027	37420	Central Transportation Planning	1126	BG
Massachusetts	25027	40255	Central Transportation Planning	1126	BG
Massachusetts	25027	41165	Central Transportation Planning	1126	BG
Massachusetts	25027	41340	Central Transportation Planning	1126	BG
Massachusetts	25027	41585	Central Transportation Planning	1126	BG
Massachusetts	25027	45105	Central Transportation Planning	1126	BG
Massachusetts	25027	46820	Central Transportation Planning	1126	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25027	46925	Central Transportation Planning	1126	BG
Massachusetts	25027	47135	Central Transportation Planning	1126	BG
Massachusetts	25027	50670	Central Transportation Planning	1126	BG
Massachusetts	25027	51825	Central Transportation Planning	1126	BG
Massachusetts	25027	52420	Central Transportation Planning	1126	BG
Massachusetts	25027	53120	Central Transportation Planning	1126	BG
Massachusetts	25027	53225	Central Transportation Planning	1126	BG
Massachusetts	25027	55395	Central Transportation Planning	1126	BG
Massachusetts	25027	58580	Central Transportation Planning	1126	BG
Massachusetts	25027	58825	Central Transportation Planning	1126	BG
Massachusetts	25027	61800	Central Transportation Planning	1126	BG
Massachusetts	25027	63165	Central Transportation Planning	1126	BG
Massachusetts	25027	63270	Central Transportation Planning	1126	BG
Massachusetts	25027	66105	Central Transportation Planning	1126	BG
Massachusetts	25027	67385	Central Transportation Planning	1126	BG
Massachusetts	25027	68155	Central Transportation Planning	1126	BG
Massachusetts	25027	68610	Central Transportation Planning	1126	BG
Massachusetts	25027	69275	Central Transportation Planning	1126	BG
Massachusetts	25027	71480	Central Transportation Planning	1126	BG
Massachusetts	25027	71620	Central Transportation Planning	1126	BG
Massachusetts	25027	73090	Central Transportation Planning	1126	BG
Massachusetts	25027	73895	Central Transportation Planning	1126	BG
Massachusetts	25027	75015	Central Transportation Planning	1126	BG
Massachusetts	25027	75155	Central Transportation Planning	1126	BG
Massachusetts	25027	75400	Central Transportation Planning	1126	BG
Massachusetts	25027	77010	Central Transportation Planning	1126	BG
Massachusetts	25027	80405	Central Transportation Planning	1126	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25027	82000	Central Transportation Planning	1126	BG
Massachusetts	25011	02095	Franklin Regional COG	3101	BG
Massachusetts	25011	05560	Franklin Regional COG	3101	BG
Massachusetts	25011	09595	Franklin Regional COG	3101	BG
Massachusetts	25011	12505	Franklin Regional COG	3101	BG
Massachusetts	25011	14885	Franklin Regional COG	3101	BG
Massachusetts	25011	15200	Franklin Regional COG	3101	BG
Massachusetts	25011	16670	Franklin Regional COG	3101	BG
Massachusetts	25011	21780	Franklin Regional COG	3101	BG
Massachusetts	25011	25730	Franklin Regional COG	3101	BG
Massachusetts	25011	27025	Franklin Regional COG	3101	BG
Massachusetts	25011	29475	Franklin Regional COG	3101	BG
Massachusetts	25011	29650	Franklin Regional COG	3101	BG
Massachusetts	25011	35180	Franklin Regional COG	3101	BG
Massachusetts	25011	35285	Franklin Regional COG	3101	BG
Massachusetts	25011	42040	Franklin Regional COG	3101	BG
Massachusetts	25011	42285	Franklin Regional COG	3101	BG
Massachusetts	25011	45490	Franklin Regional COG	3101	BG
Massachusetts	25011	47835	Franklin Regional COG	3101	BG
Massachusetts	25011	51265	Franklin Regional COG	3101	BG
Massachusetts	25011	58335	Franklin Regional COG	3101	BG
Massachusetts	25011	61135	Franklin Regional COG	3101	BG
Massachusetts	25011	61905	Franklin Regional COG	3101	BG
Massachusetts	25011	68400	Franklin Regional COG	3101	BG
Massachusetts	25011	73265	Franklin Regional COG	3101	BG
Massachusetts	25011	74525	Franklin Regional COG	3101	BG
Massachusetts	25011	79110	Franklin Regional COG	3101	BG
Massachusetts	25007	01585	Marthas Vineyard Commission	4861	BG
Massachusetts	25007	13800	Marthas Vineyard Commission	4861	BG
Massachusetts	25007	21150	Marthas Vineyard Commission	4861	BG
Massachusetts	25007	26325	Marthas Vineyard Commission	4861	BG
Massachusetts	25007	50390	Marthas Vineyard Commission	4861	BG
Massachusetts	25007	69940	Marthas Vineyard Commission	4861	BG
Massachusetts	25007	78235	Marthas Vineyard Commission	4861	BG
Massachusetts	25009	01185	Merrimack Valley PC	4161	BG
Massachusetts	25009	01465	Merrimack Valley PC	4161	BG
Massachusetts	25009	07420	Merrimack Valley PC	4161	BG
Massachusetts	25009	25625	Merrimack Valley PC	4161	BG
Massachusetts	25009	27620	Merrimack Valley PC	4161	BG
Massachusetts	25009	29405	Merrimack Valley PC	4161	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25009	34550	Merrimack Valley PC	4161	BG
Massachusetts	25009	40430	Merrimack Valley PC	4161	BG
Massachusetts	25009	40710	Merrimack Valley PC	4161	BG
Massachusetts	25009	45175	Merrimack Valley PC	4161	BG
Massachusetts	25009	45245	Merrimack Valley PC	4161	BG
Massachusetts	25009	46365	Merrimack Valley PC	4161	BG
Massachusetts	25009	58405	Merrimack Valley PC	4161	BG
Massachusetts	25009	59245	Merrimack Valley PC	4161	BG
Massachusetts	25009	77150	Merrimack Valley PC	4161	BG
Massachusetts	25017	01955	Montachusett RPC	2601	BG
Massachusetts	25017	03005	Montachusett RPC	2601	BG
Massachusetts	25017	27480	Montachusett RPC	2601	BG
Massachusetts	25017	61590	Montachusett RPC	2601	BG
Massachusetts	25017	70360	Montachusett RPC	2601	BG
Massachusetts	25027	01885	Montachusett RPC	2601	BG
Massachusetts	25027	02480	Montachusett RPC	2601	BG
Massachusetts	25027	14395	Montachusett RPC	2601	BG
Massachusetts	25027	23875	Montachusett RPC	2601	BG
Massachusetts	25027	25485	Montachusett RPC	2601	BG
Massachusetts	25027	28950	Montachusett RPC	2601	BG
Massachusetts	25027	31435	Montachusett RPC	2601	BG
Massachusetts	25027	34165	Montachusett RPC	2601	BG
Massachusetts	25027	35075	Montachusett RPC	2601	BG
Massachusetts	25027	37420	Montachusett RPC	2601	BG
Massachusetts	25027	53120	Montachusett RPC	2601	BG
Massachusetts	25027	53225	Montachusett RPC	2601	BG
Massachusetts	25027	58580	Montachusett RPC	2601	BG
Massachusetts	25027	67385	Montachusett RPC	2601	BG
Massachusetts	25027	69275	Montachusett RPC	2601	BG
Massachusetts	25027	77010	Montachusett RPC	2601	BG
Massachusetts	25027	80405	Montachusett RPC	2601	BG
Massachusetts	25019	43790	Nantucket Planning & EDC	5301	BG
Massachusetts	25017	05805	Northern Middlesex COG	4561	BG
Massachusetts	25017	13135	Northern Middlesex COG	4561	BG
Massachusetts	25017	17475	Northern Middlesex COG	4561	BG
Massachusetts	25017	17825	Northern Middlesex COG	4561	BG
Massachusetts	25017	37000	Northern Middlesex COG	4561	BG
Massachusetts	25017	52805	Northern Middlesex COG	4561	BG
Massachusetts	25017	69415	Northern Middlesex COG	4561	BG
Massachusetts	25017	71025	Northern Middlesex COG	4561	BG
Massachusetts	25017	76135	Northern Middlesex COG	4561	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25005	20100	Old Colony Planning Council	1201	BG
Massachusetts	25021	02935	Old Colony Planning Council	1201	BG
Massachusetts	25021	67945	Old Colony Planning Council	1201	BG
Massachusetts	25023	00170	Old Colony Planning Council	1201	BG
Massachusetts	25023	08085	Old Colony Planning Council	1201	BG
Massachusetts	25023	09000	Old Colony Planning Council	1201	BG
Massachusetts	25023	18455	Old Colony Planning Council	1201	BG
Massachusetts	25023	27795	Old Colony Planning Council	1201	BG
Massachusetts	25023	28495	Old Colony Planning Council	1201	BG
Massachusetts	25023	33220	Old Colony Planning Council	1201	BG
Massachusetts	25023	52630	Old Colony Planning Council	1201	BG
Massachusetts	25023	54310	Old Colony Planning Council	1201	BG
Massachusetts	25023	54415	Old Colony Planning Council	1201	BG
Massachusetts	25023	75260	Old Colony Planning Council	1201	BG
Massachusetts	25023	79530	Old Colony Planning Council	1201	BG
Massachusetts	25013	00765	Pioneer Valley PC	8001	BG
Massachusetts	25013	06085	Pioneer Valley PC	8001	BG
Massachusetts	25013	08470	Pioneer Valley PC	8001	BG
Massachusetts	25013	13485	Pioneer Valley PC	8001	BG
Massachusetts	25013	13660	Pioneer Valley PC	8001	BG
Massachusetts	25013	19645	Pioneer Valley PC	8001	BG
Massachusetts	25013	26675	Pioneer Valley PC	8001	BG
Massachusetts	25013	28075	Pioneer Valley PC	8001	BG
Massachusetts	25013	30665	Pioneer Valley PC	8001	BG
Massachusetts	25013	30840	Pioneer Valley PC	8001	BG
Massachusetts	25013	36300	Pioneer Valley PC	8001	BG
Massachusetts	25013	37175	Pioneer Valley PC	8001	BG
Massachusetts	25013	42145	Pioneer Valley PC	8001	BG
Massachusetts	25013	42530	Pioneer Valley PC	8001	BG
Massachusetts	25013	52105	Pioneer Valley PC	8001	BG
Massachusetts	25013	58650	Pioneer Valley PC	8001	BG
Massachusetts	25013	65825	Pioneer Valley PC	8001	BG
Massachusetts	25013	67000	Pioneer Valley PC	8001	BG
Massachusetts	25013	70045	Pioneer Valley PC	8001	BG
Massachusetts	25013	72390	Pioneer Valley PC	8001	BG
Massachusetts	25013	76030	Pioneer Valley PC	8001	BG
Massachusetts	25013	77850	Pioneer Valley PC	8001	BG
Massachusetts	25013	79740	Pioneer Valley PC	8001	BG
Massachusetts	25015	01325	Pioneer Valley PC	8001	BG
Massachusetts	25015	04825	Pioneer Valley PC	8001	BG
Massachusetts	25015	13590	Pioneer Valley PC	8001	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25015	16040	Pioneer Valley PC	8001	BG
Massachusetts	25015	19330	Pioneer Valley PC	8001	BG
Massachusetts	25015	26290	Pioneer Valley PC	8001	BG
Massachusetts	25015	26535	Pioneer Valley PC	8001	BG
Massachusetts	25015	27690	Pioneer Valley PC	8001	BG
Massachusetts	25015	29265	Pioneer Valley PC	8001	BG
Massachusetts	25015	31785	Pioneer Valley PC	8001	BG
Massachusetts	25015	40990	Pioneer Valley PC	8001	BG
Massachusetts	25015	46330	Pioneer Valley PC	8001	BG
Massachusetts	25015	52560	Pioneer Valley PC	8001	BG
Massachusetts	25015	54030	Pioneer Valley PC	8001	BG
Massachusetts	25015	62745	Pioneer Valley PC	8001	BG
Massachusetts	25015	64145	Pioneer Valley PC	8001	BG
Massachusetts	25015	72880	Pioneer Valley PC	8001	BG
Massachusetts	25015	76380	Pioneer Valley PC	8001	BG
Massachusetts	25015	79915	Pioneer Valley PC	8001	BG
Massachusetts	25015	82175	Pioneer Valley PC	8001	BG
Massachusetts	25005	00520	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	02690	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	05280	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	16425	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	16950	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	22130	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	23000	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	25240	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	38225	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	45000	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	46575	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	49970	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	56060	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	56375	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	60645	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	62430	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	68750	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	69170	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25005	77570	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25021	54100	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25023	11665	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25023	33920	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25023	38540	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25023	39450	Southeastern Reg. Plan. & Econ. Dev.	2481	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Massachusetts	25023	40850	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
Massachusetts	25023	57600	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
New Hampshire	25023	72985	Southeastern Reg. Plan. & Econ. Dev.	2481	BG
New Hampshire	33013	37300	Central Transportation Planning	1126	TAZ
New Hampshire	33005	00820	Central Transportation Planning	1126	TAZ
New Hampshire	33005	12260	Central Transportation Planning	1126	TAZ
New Hampshire	33005	19140	Central Transportation Planning	1126	TAZ
New Hampshire	33005	26500	Central Transportation Planning	1126	TAZ
New Hampshire	33005	29220	Central Transportation Planning	1126	TAZ
New Hampshire	33005	34420	Central Transportation Planning	1126	TAZ
New Hampshire	33005	36660	Central Transportation Planning	1126	TAZ
New Hampshire	33005	38500	Central Transportation Planning	1126	TAZ
New Hampshire	33005	39300	Central Transportation Planning	1126	TAZ
New Hampshire	33005	45460	Central Transportation Planning	1126	TAZ
New Hampshire	33005	45700	Central Transportation Planning	1126	TAZ
New Hampshire	33005	50580	Central Transportation Planning	1126	TAZ
New Hampshire	33005	64420	Central Transportation Planning	1126	TAZ
New Hampshire	33005	64580	Central Transportation Planning	1126	TAZ
New Hampshire	33005	65700	Central Transportation Planning	1126	TAZ
New Hampshire	33005	73700	Central Transportation Planning	1126	TAZ
New Hampshire	33005	74900	Central Transportation Planning	1126	TAZ
New Hampshire	33005	75300	Central Transportation Planning	1126	TAZ
New Hampshire	33005	75700	Central Transportation Planning	1126	TAZ
New Hampshire	33005	77380	Central Transportation Planning	1126	TAZ
New Hampshire	33005	78420	Central Transportation Planning	1126	TAZ
New Hampshire	33005	82660	Central Transportation Planning	1126	TAZ
New Hampshire	33005	85540	Central Transportation Planning	1126	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
New Hampshire	33011	01300	Central Transportation Planning	1126	TAZ
New Hampshire	33011	08100	Central Transportation Planning	1126	TAZ
New Hampshire	33011	37140	Central Transportation Planning	1126	TAZ
New Hampshire	33011	37940	Central Transportation Planning	1126	TAZ
New Hampshire	33011	42260	Central Transportation Planning	1126	TAZ
New Hampshire	33011	44580	Central Transportation Planning	1126	TAZ
New Hampshire	33011	47540	Central Transportation Planning	1126	TAZ
New Hampshire	33011	48020	Central Transportation Planning	1126	TAZ
New Hampshire	33011	49140	Central Transportation Planning	1126	TAZ
New Hampshire	33011	50260	Central Transportation Planning	1126	TAZ
New Hampshire	33011	59940	Central Transportation Planning	1126	TAZ
New Hampshire	33011	85220	Central Transportation Planning	1126	TAZ
New Hampshire	33011	04500	Central Transportation Planning	1126	TAZ
New Hampshire	33011	29860	Central Transportation Planning	1126	TAZ
New Hampshire	33011	45140	Central Transportation Planning	1126	TAZ
New Hampshire	33011	50740	Central Transportation Planning	1126	TAZ
New Hampshire	33011	79780	Central Transportation Planning	1126	TAZ
New Hampshire	33011	01700	Central Transportation Planning	1126	TAZ
New Hampshire	33011	04900	Central Transportation Planning	1126	TAZ
New Hampshire	33011	17780	Central Transportation Planning	1126	TAZ
New Hampshire	33011	27140	Central Transportation Planning	1126	TAZ
New Hampshire	33011	31540	Central Transportation Planning	1126	TAZ
New Hampshire	33011	31940	Central Transportation Planning	1126	TAZ
New Hampshire	33011	33700	Central Transportation Planning	1126	TAZ
New Hampshire	33011	36180	Central Transportation Planning	1126	TAZ
New Hampshire	33011	46260	Central Transportation Planning	1126	TAZ
New Hampshire	33011	51940	Central Transportation Planning	1126	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
New Hampshire	33011	60580	Central Transportation Planning	1126	TAZ
New Hampshire	33011	68820	Central Transportation Planning	1126	TAZ
New Hampshire	33011	76260	Central Transportation Planning	1126	TAZ
New Hampshire	33011	85940	Central Transportation Planning	1126	TAZ
New Hampshire	33013	00660	Central Transportation Planning	1126	TAZ
New Hampshire	33013	01460	Central Transportation Planning	1126	TAZ
New Hampshire	33013	06260	Central Transportation Planning	1126	TAZ
New Hampshire	33013	06500	Central Transportation Planning	1126	TAZ
New Hampshire	33013	06980	Central Transportation Planning	1126	TAZ
New Hampshire	33013	09860	Central Transportation Planning	1126	TAZ
New Hampshire	33013	12420	Central Transportation Planning	1126	TAZ
New Hampshire	33013	14200	Central Transportation Planning	1126	TAZ
New Hampshire	33013	16980	Central Transportation Planning	1126	TAZ
New Hampshire	33013	19460	Central Transportation Planning	1126	TAZ
New Hampshire	33013	24900	Central Transportation Planning	1126	TAZ
New Hampshire	33013	27380	Central Transportation Planning	1126	TAZ
New Hampshire	33013	35540	Central Transportation Planning	1126	TAZ
New Hampshire	33013	35860	Central Transportation Planning	1126	TAZ
New Hampshire	33013	37540	Central Transportation Planning	1126	TAZ
New Hampshire	33013	43380	Central Transportation Planning	1126	TAZ
New Hampshire	33013	50900	Central Transportation Planning	1126	TAZ
New Hampshire	33013	52100	Central Transportation Planning	1126	TAZ
New Hampshire	33013	54260	Central Transportation Planning	1126	TAZ
New Hampshire	33013	60020	Central Transportation Planning	1126	TAZ
New Hampshire	33013	61940	Central Transportation Planning	1126	TAZ
New Hampshire	33013	66980	Central Transportation Planning	1126	TAZ
New Hampshire	33013	75460	Central Transportation Planning	1126	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
New Hampshire	33013	78580	Central Transportation Planning	1126	TAZ
New Hampshire	33013	80020	Central Transportation Planning	1126	TAZ
New Hampshire	33013	84900	Central Transportation Planning	1126	TAZ
New Hampshire	33015	02340	Central Transportation Planning	1126	TAZ
New Hampshire	33015	17140	Central Transportation Planning	1126	TAZ
New Hampshire	33015	32900	Central Transportation Planning	1126	TAZ
New Hampshire	33015	40100	Central Transportation Planning	1126	TAZ
New Hampshire	33015	52900	Central Transportation Planning	1126	TAZ
New Hampshire	33015	62500	Central Transportation Planning	1126	TAZ
New Hampshire	33015	66660	Central Transportation Planning	1126	TAZ
New Hampshire	33015	67620	Central Transportation Planning	1126	TAZ
New Hampshire	33015	85780	Central Transportation Planning	1126	TAZ
New Hampshire	33015	07220	Central Transportation Planning	1126	TAZ
New Hampshire	33015	21380	Central Transportation Planning	1126	TAZ
New Hampshire	33015	24660	Central Transportation Planning	1126	TAZ
New Hampshire	33015	25380	Central Transportation Planning	1126	TAZ
New Hampshire	33015	27940	Central Transportation Planning	1126	TAZ
New Hampshire	33015	31700	Central Transportation Planning	1126	TAZ
New Hampshire	33015	33060	Central Transportation Planning	1126	TAZ
New Hampshire	33015	33460	Central Transportation Planning	1126	TAZ
New Hampshire	33015	39780	Central Transportation Planning	1126	TAZ
New Hampshire	33015	50980	Central Transportation Planning	1126	TAZ
New Hampshire	33015	51380	Central Transportation Planning	1126	TAZ
New Hampshire	33015	51620	Central Transportation Planning	1126	TAZ
New Hampshire	33015	52340	Central Transportation Planning	1126	TAZ
New Hampshire	33015	54580	Central Transportation Planning	1126	TAZ
New Hampshire	33015	56820	Central Transportation Planning	1126	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
New Hampshire	33015	57460	Central Transportation Planning	1126	TAZ
New Hampshire	33015	62900	Central Transportation Planning	1126	TAZ
New Hampshire	33015	66180	Central Transportation Planning	1126	TAZ
New Hampshire	33015	68260	Central Transportation Planning	1126	TAZ
New Hampshire	33015	71140	Central Transportation Planning	1126	TAZ
New Hampshire	33015	74340	Central Transportation Planning	1126	TAZ
New Hampshire	33015	02820	Central Transportation Planning	1126	TAZ
New Hampshire	33015	09300	Central Transportation Planning	1126	TAZ
New Hampshire	33015	12100	Central Transportation Planning	1126	TAZ
New Hampshire	33015	17460	Central Transportation Planning	1126	TAZ
New Hampshire	33015	17940	Central Transportation Planning	1126	TAZ
New Hampshire	33015	43220	Central Transportation Planning	1126	TAZ
New Hampshire	33015	64020	Central Transportation Planning	1126	TAZ
New Hampshire	33017	03460	Central Transportation Planning	1126	TAZ
New Hampshire	33017	18820	Central Transportation Planning	1126	TAZ
New Hampshire	33017	19700	Central Transportation Planning	1126	TAZ
New Hampshire	33017	26020	Central Transportation Planning	1126	TAZ
New Hampshire	33017	41460	Central Transportation Planning	1126	TAZ
New Hampshire	33017	44820	Central Transportation Planning	1126	TAZ
New Hampshire	33017	47700	Central Transportation Planning	1126	TAZ
New Hampshire	33017	48660	Central Transportation Planning	1126	TAZ
New Hampshire	33017	51220	Central Transportation Planning	1126	TAZ
New Hampshire	33017	65140	Central Transportation Planning	1126	TAZ
New Hampshire	33017	65540	Central Transportation Planning	1126	TAZ
New Hampshire	33017	69940	Central Transportation Planning	1126	TAZ
New Hampshire	33017	73860	Central Transportation Planning	1126	TAZ
New Hampshire	33011	01300	Nashua RPC	5351	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
New Hampshire	33011	08100	Nashua RPC	5351	BG
New Hampshire	33011	37140	Nashua RPC	5351	BG
New Hampshire	33011	37940	Nashua RPC	5351	BG
New Hampshire	33011	42260	Nashua RPC	5351	BG
New Hampshire	33011	44580	Nashua RPC	5351	BG
New Hampshire	33011	47540	Nashua RPC	5351	BG
New Hampshire	33011	48020	Nashua RPC	5351	BG
New Hampshire	33011	49140	Nashua RPC	5351	BG
New Hampshire	33011	50260	Nashua RPC	5351	BG
New Hampshire	33011	59940	Nashua RPC	5351	BG
New Hampshire	33011	85220	Nashua RPC	5351	BG
New Hampshire	33015	02340	Salem Plaistow Windham MPO	7061	TAZ
New Hampshire	33015	17140	Salem Plaistow Windham MPO	7061	TAZ
New Hampshire	33015	32900	Salem Plaistow Windham MPO	7061	TAZ
New Hampshire	33015	40100	Salem Plaistow Windham MPO	7061	TAZ
New Hampshire	33015	52900	Salem Plaistow Windham MPO	7061	TAZ
New Hampshire	33015	62500	Salem Plaistow Windham MPO	7061	TAZ
New Hampshire	33015	66660	Salem Plaistow Windham MPO	7061	TAZ
New Hampshire	33015	67620	Salem Plaistow Windham MPO	7061	TAZ
New Hampshire	33015	85780	Salem Plaistow Windham MPO	7061	TAZ
New Hampshire	33003	07940	Sea Coast MPO	6451	TAZ
New Hampshire	33003	78180	Sea Coast MPO	6451	TAZ
New Hampshire	33015	07220	Sea Coast MPO	6451	TAZ
New Hampshire	33015	21380	Sea Coast MPO	6451	TAZ
New Hampshire	33015	24660	Sea Coast MPO	6451	TAZ
New Hampshire	33015	25380	Sea Coast MPO	6451	TAZ
New Hampshire	33015	27940	Sea Coast MPO	6451	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
New Hampshire	33015	31700	Sea Coast MPO	6451	TAZ
New Hampshire	33015	33060	Sea Coast MPO	6451	TAZ
New Hampshire	33015	33460	Sea Coast MPO	6451	TAZ
New Hampshire	33015	39780	Sea Coast MPO	6451	TAZ
New Hampshire	33015	50980	Sea Coast MPO	6451	TAZ
New Hampshire	33015	51380	Sea Coast MPO	6451	TAZ
New Hampshire	33015	51620	Sea Coast MPO	6451	TAZ
New Hampshire	33015	52340	Sea Coast MPO	6451	TAZ
New Hampshire	33015	54580	Sea Coast MPO	6451	TAZ
New Hampshire	33015	56820	Sea Coast MPO	6451	TAZ
New Hampshire	33015	57460	Sea Coast MPO	6451	TAZ
New Hampshire	33015	62900	Sea Coast MPO	6451	TAZ
New Hampshire	33015	66180	Sea Coast MPO	6451	TAZ
New Hampshire	33015	68260	Sea Coast MPO	6451	TAZ
New Hampshire	33015	71140	Sea Coast MPO	6451	TAZ
New Hampshire	33015	74340	Sea Coast MPO	6451	TAZ
New Hampshire	33017	03460	Sea Coast MPO	6451	TAZ
New Hampshire	33017	18820	Sea Coast MPO	6451	TAZ
New Hampshire	33017	19700	Sea Coast MPO	6451	TAZ
New Hampshire	33017	26020	Sea Coast MPO	6451	TAZ
New Hampshire	33017	41460	Sea Coast MPO	6451	TAZ
New Hampshire	33017	44820	Sea Coast MPO	6451	TAZ
New Hampshire	33017	47700	Sea Coast MPO	6451	TAZ
New Hampshire	33017	48660	Sea Coast MPO	6451	TAZ
New Hampshire	33017	51220	Sea Coast MPO	6451	TAZ
New Hampshire	33017	65140	Sea Coast MPO	6451	TAZ
New Hampshire	33017	65540	Sea Coast MPO	6451	TAZ

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
New Hampshire	33017	69940	Sea Coast MPO	6451	TAZ
New Hampshire	33017	73860	Sea Coast MPO	6451	TAZ
New Hampshire	33011	04500	Southern New Hampshire PC	4761	TAZ
New Hampshire	33011	29860	Southern New Hampshire PC	4761	TAZ
New Hampshire	33011	45140	Southern New Hampshire PC	4761	TAZ
New Hampshire	33011	50740	Southern New Hampshire PC	4761	TAZ
New Hampshire	33011	79780	Southern New Hampshire PC	4761	TAZ
New Hampshire	33013	37300	Southern New Hampshire PC	4761	TAZ
New Hampshire	33015	02820	Southern New Hampshire PC	4761	TAZ
New Hampshire	33015	09300	Southern New Hampshire PC	4761	TAZ
New Hampshire	33015	12100	Southern New Hampshire PC	4761	TAZ
New Hampshire	33015	17460	Southern New Hampshire PC	4761	TAZ
New Hampshire	33015	17940	Southern New Hampshire PC	4761	TAZ
New Hampshire	33015	43220	Southern New Hampshire PC	4761	TAZ
New Hampshire	33015	64020	Southern New Hampshire PC	4761	TAZ
Rhode Island	44001	all	Central Transportation Planning	1126	TAZ
Rhode Island	44003	all	Central Transportation Planning	1126	TAZ
Rhode Island	44005	all	Central Transportation Planning	1126	TAZ
Rhode Island	44007	all	Central Transportation Planning	1126	TAZ
Rhode Island	44009	all	Central Transportation Planning	1126	TAZ
Rhode Island	44001	all	Rhode Island Statewide Planning Program	6481	TAZ
Rhode Island	44003	all	Rhode Island Statewide Planning Program	6481	TAZ
Rhode Island	44005	all	Rhode Island Statewide Planning Program	6481	TAZ
Rhode Island	44007	all	Rhode Island Statewide Planning Program	6481	TAZ
Rhode Island	44009	all	Rhode Island Statewide Planning Program	6481	TAZ
Vermont	50001	00325	Chittenden County MPO	1306	BG
Vermont	50001	08575	Chittenden County MPO	1306	BG
Vermont	50001	09025	Chittenden County MPO	1306	BG
Vermont	50001	16000	Chittenden County MPO	1306	BG
Vermont	50001	26275	Chittenden County MPO	1306	BG
Vermont	50001	28600	Chittenden County MPO	1306	BG
Vermont	50001	29575	Chittenden County MPO	1306	BG
Vermont	50001	31525	Chittenden County MPO	1306	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Vermont	50001	39325	Chittenden County MPO	1306	BG
Vermont	50001	40075	Chittenden County MPO	1306	BG
Vermont	50001	44350	Chittenden County MPO	1306	BG
Vermont	50001	45550	Chittenden County MPO	1306	BG
Vermont	50001	48700	Chittenden County MPO	1306	BG
Vermont	50001	53725	Chittenden County MPO	1306	BG
Vermont	50001	53950	Chittenden County MPO	1306	BG
Vermont	50001	59650	Chittenden County MPO	1306	BG
Vermont	50001	62575	Chittenden County MPO	1306	BG
Vermont	50001	65050	Chittenden County MPO	1306	BG
Vermont	50001	70075	Chittenden County MPO	1306	BG
Vermont	50001	74650	Chittenden County MPO	1306	BG
Vermont	50001	76075	Chittenden County MPO	1306	BG
Vermont	50001	83275	Chittenden County MPO	1306	BG
Vermont	50001	83800	Chittenden County MPO	1306	BG
Vermont	50007	06550	Chittenden County MPO	1306	TAZ
Vermont	50007	10300	Chittenden County MPO	1306	TAZ
Vermont	50007	10675	Chittenden County MPO	1306	TAZ
Vermont	50007	13300	Chittenden County MPO	1306	TAZ
Vermont	50007	14875	Chittenden County MPO	1306	TAZ
Vermont	50007	24175	Chittenden County MPO	1306	TAZ
Vermont	50007	33475	Chittenden County MPO	1306	TAZ
Vermont	50007	34600	Chittenden County MPO	1306	TAZ
Vermont	50007	36700	Chittenden County MPO	1306	TAZ
Vermont	50007	45250	Chittenden County MPO	1306	TAZ
Vermont	50007	59275	Chittenden County MPO	1306	TAZ
Vermont	50007	62050	Chittenden County MPO	1306	TAZ
Vermont	50007	64300	Chittenden County MPO	1306	TAZ
Vermont	50007	66175	Chittenden County MPO	1306	TAZ
Vermont	50007	73975	Chittenden County MPO	1306	TAZ
Vermont	50007	80350	Chittenden County MPO	1306	TAZ
Vermont	50007	84475	Chittenden County MPO	1306	TAZ
Vermont	50007	85150	Chittenden County MPO	1306	TAZ
Vermont	50011	02500	Chittenden County MPO	1306	BG
Vermont	50011	05425	Chittenden County MPO	1306	BG
Vermont	50011	23875	Chittenden County MPO	1306	BG
Vermont	50011	24925	Chittenden County MPO	1306	BG
Vermont	50011	25225	Chittenden County MPO	1306	BG
Vermont	50011	26500	Chittenden County MPO	1306	BG
Vermont	50011	27100	Chittenden County MPO	1306	BG
Vermont	50011	27700	Chittenden County MPO	1306	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Vermont	50011	33025	Chittenden County MPO	1306	BG
Vermont	50011	45850	Chittenden County MPO	1306	BG
Vermont	50011	59125	Chittenden County MPO	1306	BG
Vermont	50011	61675	Chittenden County MPO	1306	BG
Vermont	50011	61750	Chittenden County MPO	1306	BG
Vermont	50011	64600	Chittenden County MPO	1306	BG
Vermont	50011	71725	Chittenden County MPO	1306	BG
Vermont	50013	00700	Chittenden County MPO	1306	BG
Vermont	50013	29275	Chittenden County MPO	1306	BG
Vermont	50013	35875	Chittenden County MPO	1306	BG
Vermont	50013	50650	Chittenden County MPO	1306	BG
Vermont	50013	67000	Chittenden County MPO	1306	BG
Vermont	50015	04375	Chittenden County MPO	1306	BG
Vermont	50015	11500	Chittenden County MPO	1306	BG
Vermont	50015	23500	Chittenden County MPO	1306	BG
Vermont	50015	23725	Chittenden County MPO	1306	BG
Vermont	50015	35050	Chittenden County MPO	1306	BG
Vermont	50015	37075	Chittenden County MPO	1306	BG
Vermont	50015	46675	Chittenden County MPO	1306	BG
Vermont	50015	70525	Chittenden County MPO	1306	BG
Vermont	50015	77425	Chittenden County MPO	1306	BG
Vermont	50015	85375	Chittenden County MPO	1306	BG
Vermont	50023	03175	Chittenden County MPO	1306	BG
Vermont	50023	03250	Chittenden County MPO	1306	BG
Vermont	50023	05650	Chittenden County MPO	1306	BG
Vermont	50023	11125	Chittenden County MPO	1306	BG
Vermont	50023	11350	Chittenden County MPO	1306	BG
Vermont	50023	18550	Chittenden County MPO	1306	BG
Vermont	50023	21925	Chittenden County MPO	1306	BG
Vermont	50023	25825	Chittenden County MPO	1306	BG
Vermont	50023	43600	Chittenden County MPO	1306	BG
Vermont	50023	44500	Chittenden County MPO	1306	BG
Vermont	50023	46000	Chittenden County MPO	1306	BG
Vermont	50023	46225	Chittenden County MPO	1306	BG
Vermont	50023	50275	Chittenden County MPO	1306	BG
Vermont	50023	55825	Chittenden County MPO	1306	BG
Vermont	50023	60625	Chittenden County MPO	1306	BG
Vermont	50023	75325	Chittenden County MPO	1306	BG
Vermont	50023	76525	Chittenden County MPO	1306	BG
Vermont	50023	76975	Chittenden County MPO	1306	BG
Vermont	50023	85525	Chittenden County MPO	1306	BG

New England States	FIPS STCOU	FIPS MCD	MPO Name	MPO Code	MPO Geography
Vermont	50023	86125	Chittenden County MPO	1306	BG