Projections Suite

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Projections Suite Introduction

Welcome to Projections Suite

The Projections Suite software is an array of applications designed to help state analysts review historical employment data, estimate future employment trends for industries and occupations, and report final projections.

The Projections Suite combines the five major projections applications: Short Term Industry Projections (STIP), Long Term Industry Projections (LTIP), Occupational Projections (OP), Report Manager (RM), and Local Review into one unified structure. All five systems have the same look and feel and share common data. The Projections Suite database can be installed on a local PC or on a network.

Projections Suite consists of 130 program modules broken up amongst three applications (STIP, LTIP, and OP) and includes two web-based applications (Report Manager and Local Review).

Click on a category above, or view the Projections Applications and Controls to get started!

Installation

The majority of the Projections Suite installation documentation is housed on the Projections Central website. Visit the Projections Central Support website installation instructions for guides on SQL Express and Database Tool installation, Projections Suite installation, prerequisite requirements, and additional installation information.

View the Projections Suite Installation Frequently Asked Questions (FAQ) by clicking here.

Access Projections Suite

To open Projections Suite, use one of the following procedures:

1. Double-click on the Projections Suite desktop icon.

Figure 1: Projection Suite icon

Or

1. Click the Start Menu button.
2. Click Projections Managing Partnership.
3. Select Projections Suite.

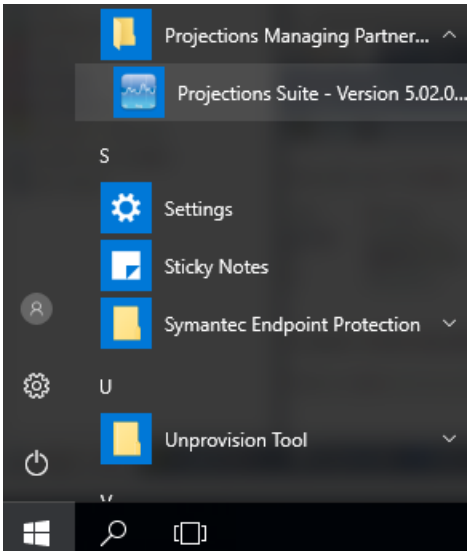


Figure 2: Menu choices used to open Projections Suite

Projections Suite Database Setup Tool

Users may need to access the Projections Suite Database Setup Tool to manage their database(s). To access the Database Setup Tool, either double-click the desktop icon or access it through the Start Menu (under Projections Managing Partnership > Projection Suite Database Setup Tool). When accessed, the following screen will be displayed:

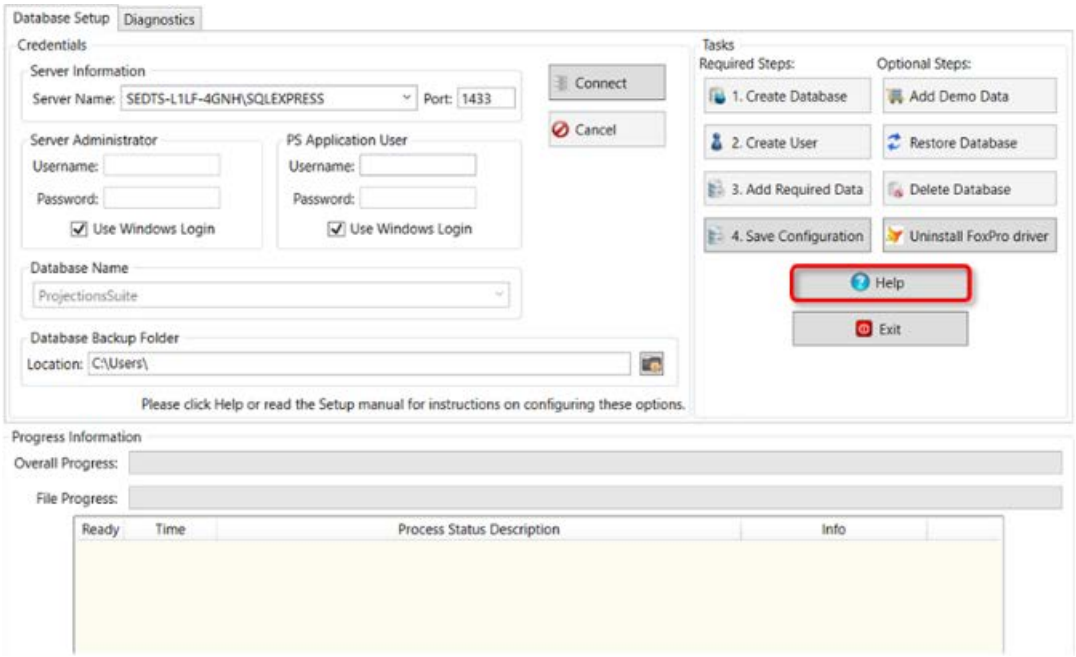


Figure 1: Projections Suite Database Setup Utility

For detailed instructions on how to configure the Projections Suite Database Setup Tool, click the **Help** button.

Related Content

- Add Separations Tables
- Backup Database

Projections Applications and Controls

Projections Applications and Controls Introduction

Figure 1: Applications and controls in Projections Suite

The Projections Suite contains the following applications and controls:

- **Short Term Projections**
- **Long Term Projections**
- **Occupational Projections**
- **Report Manager**
- **Local Review**
- **Getting Started**
  - By clicking Getting Started during any point while calculating projections, this help document will appear. Alternatively, clicking the **Help** button on the Active Module Toolbar will open to the section in this document you are currently having trouble with.

☞Tips are written throughout the Getting Started and Help documentation, to assist the user in navigating the Projections Suite modules.

- **Settings**
  - Clicking the Settings menu selection will open the Projection Suite Settings, where you can adjust the way the Projections application looks (to include chart colors and general application settings).
- **Exit**
  - Exits Projections Suite.

Navigating the Help File

Projections Suite Help Navigation Menu

When navigating through Help, to get back to screens already visited, use one of the following methods:

- Click the Back arrow icon in the upper left hand corner of the help application, to move back one screen per click.

Figure 1: Clicking Back navigates to the last page visited

Alternatively, hold the **Alt** button and use the **left** and **right arrow keys** to rapidly navigate back and forth through your topic selections.

Bread Crumb Navigation

- Click on the desired path segment from the path bread crumb at the top of the help page.

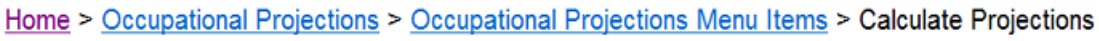


Figure 2: Click on Occupational Projections, to navigate directly to that topic

Table of Contents Navigation

- Click on the page's Table of Contents link.

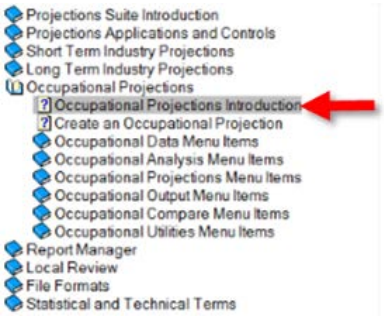


Figure 3: Click on the Table of Contents link to go directly to a topic

Application Toolbar

The Application Toolbar appears at the top of (and allow access to) each of the application group menus. Its purpose is to display the group menu (sub-menu) items for the active application section.

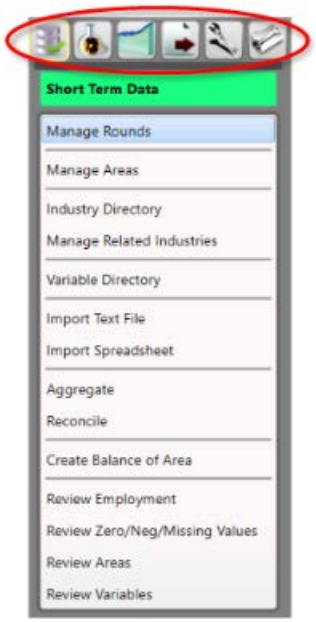


Figure 1: Application Toolbar

Hovering over each selection reveals a hot-key for quick access. Typical Application Toolbar menu items include:

- Data Menus (F5) 
- Analysis Menus (F6) 
- Projections Menus (F7) 
- Adjustments Menus (F8) 
- Output Menus (F9) 
- Geographic Comparison Menus (F12) 
- Utilities Menus (F11) 

The Application Toolbar choices will change each time a different application is selected. Not all Application Toolbar choices are available in each application.

Application Group Menus

Use the Group Menus under each Application Toolbar menu item to access the individual modules within each the application.

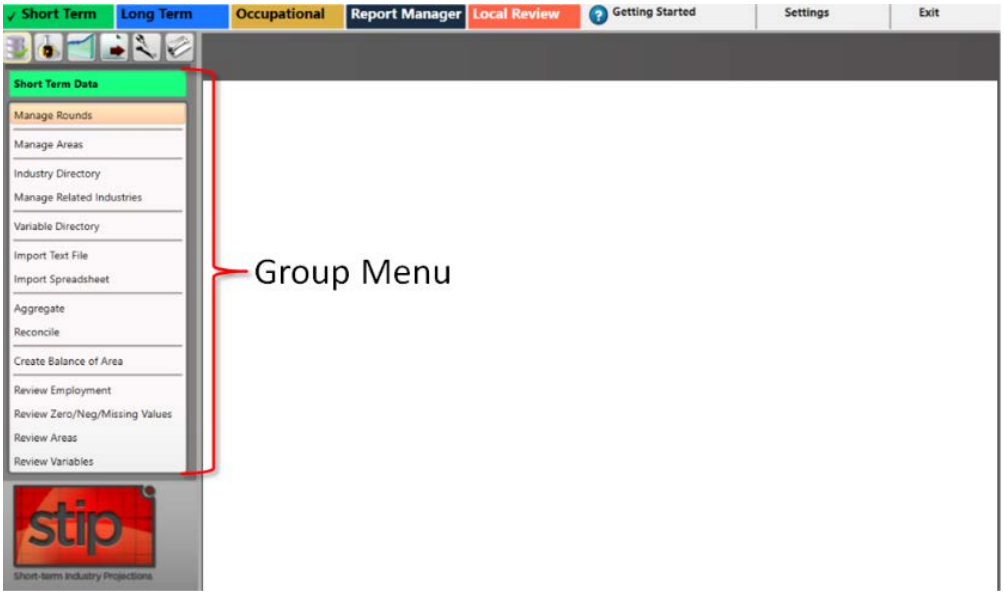


Figure 1: This example displays the Short Term Data group menu, at the left of the screen

To utilize the **Application Toolbar** or an application menu choice, click on it. The chosen module will activate.

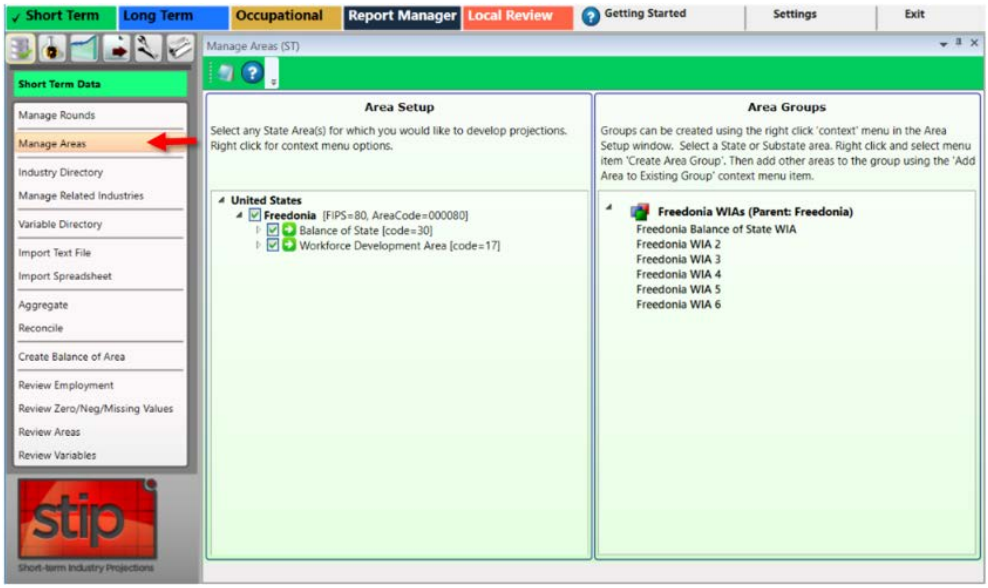


Figure 2: This example displays the Manage Areas module

There are two types of modules, **Long-Lived** and **Short-Lived**. The types act differently when you open multiple windows.

- **Long-Lived** - These windows stay open when you open another window. Examples are Manage Rounds, Manage Areas, and Industry Directory. When a long-lived window is open and you open another, the first window auto-hides at the bottom of the frame. If you hover over the auto-hidden window, it partially opens. Click the title in the bottom of the frame to swap the auto-hidden window with the open window.
- **Short-Lived** - These windows automatically close when you open another window.

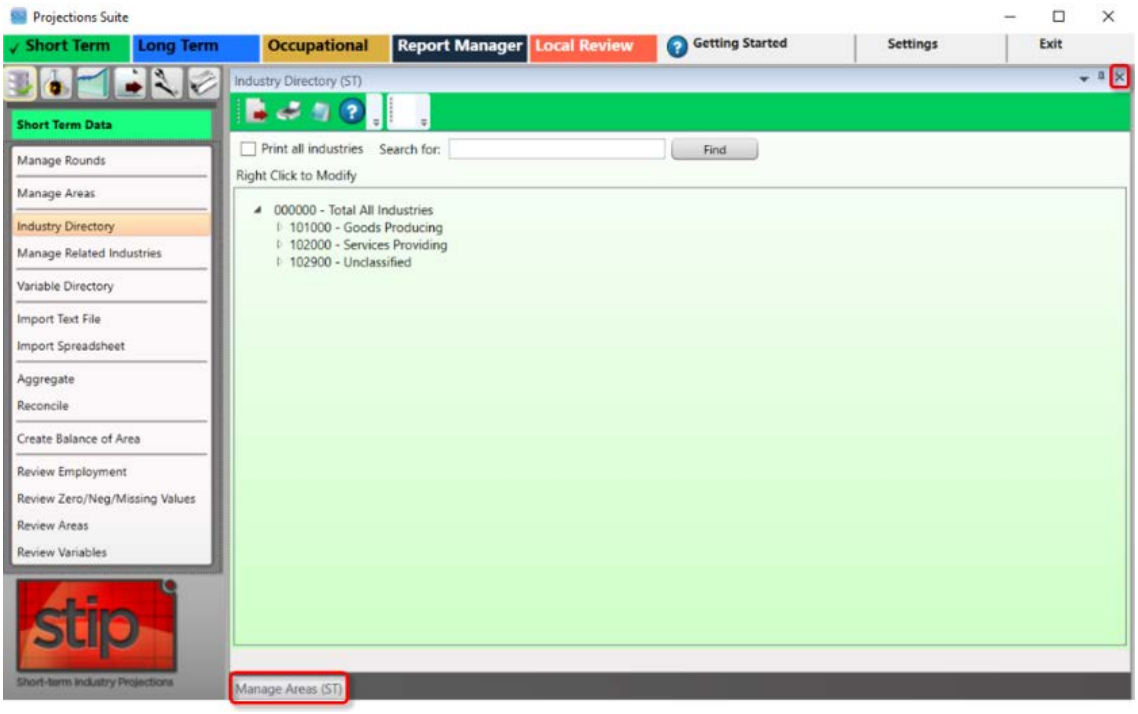


Figure 3: Example of a long-lived module's tab

To close long-lived windows, simply open them and click the **X** near the top right-hand corner of the module (closing the window in this way saves any changes). Be careful not to click the X in the *uppermost* top right-hand corner, unless you want to close Projections Suite entirely.

If you close an open module, the auto-hidden module will partially display. Click the auto-hide push pin to fully display the window.

Some modules like **Create Balance of State** need to remain open while accessing other screens, due to its long processing time.

Settings Menu

Figure 1: Settings menu selection

The Settings option allows the user to set specific values for common settings for the Suite and its applications. There are eight main areas in the Settings menu:

- **Application -** Displays general application settings (i.e., window size, backup options, etc.).
- **Charts -** Allows you to change chart settings and colors.
- **General Data Preparation -** Settings for application defaults (specifically for Outliers).
- **Geographic Comparison -** Account details for the Geographic Comparison modules.
- **Long Term -** Settings for Long Term data defaults.
- **Occupational Projections -** Settings for Occupational data defaults.
- **Short Term -** Settings for Short Term data defaults.
- **Support Site Account -** Shows Projections Support Site email and occluded password.

Utilize Settings Menu

1. Click the **Settings** menu choice. The Projections Suite Settings will display:

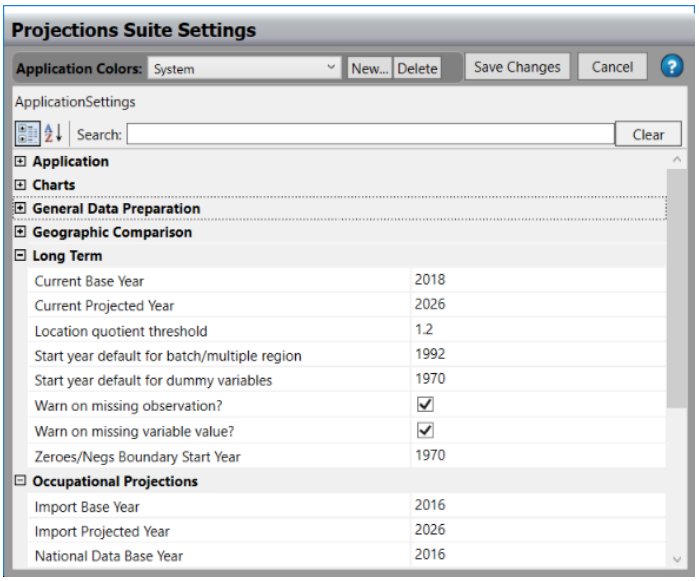


Figure 2: Projections Suite Settings

2. Click the Expand **[+]** icon for the desired option.
3. Click on the value in the right column to change the existing value.
4. Click the **Save Changes** button to save changes made.
5. Click the **Cancel** button to cancel making any changes.

An example of changing settings is the Long Term Projections **Current Projected Year**. Reset this value at the beginning of each new projection cycle. You can also set the base year. The standard base year is ten years less than the projected year, for Long Term applications.

Screen Controls

This section was included to aid the user with familiarization of modules and screens, and to demonstrate that the look, feel, and ease of use of the Projections Suite is standardized. Trying out these options will increase your ability to use the application easily, efficiently, and to your liking.

☞Projections Training includes demonstrations of the user interface.

Screen Resolution
The minimum supported screen resolution is 1024x768 while the application is maximized. If you cannot see the entire screen, please check your screen resolution. Do this by right-clicking on your Windows desktop, selecting **Properties**, and then the **Settings** tab. For Windows 10, right click your desktop, select **Display Settings**, then navigate to **Resolution**.

Docking and Floating
Projections Suite opens modules as docked or floating. Most modules as are opened as docked, by default. This documentation will tell you if a window or screen will be opened as floating. However, nearly all windows can be docked or floated. To change whether a window is docked or floated, use the following steps:

1. Right click the title bar (above the Active Module Toolbar) of any window, or click the down arrow to open the following context menu.

Figure 1: Right click the title bar

2. Click the desired choice.

- **Floating** - The window can be dragged to any position within the application or even outside the main application window. To dock the window, right click in the title bar and select **Dockable**. Then close the window. When you reopen the window it will be docked.
- **Dockable** - The window is in a fixed position to the rest of the application windows.

- **Auto Hide** - The window is minimized and the title displays in the bottom left of the window. To re-open the window, uncheck the **Auto Hide** option.
- **Hide** - The window closes. To reopen the window, click the module's group menu option under the correct category.

☞Alternatively, double-clicking the title bar will quickly switch between floating and docked, if the screen is dockable.

In addition, as you move the floating window over the application, you will see a square tile icons (, , ,) with an arrow in it on each of the four sides, to the right of the application group menu. To dock the screen with these arrows, use the following steps:

1. Click and drag the screen to be docked, directly over the arrow pointing to the side of the frame, on which the screen is to be docked.
2. Release the mouse button.

☞If another window is already open in the frame, the windows will tile themselves. If no other window is open, it will occupy the entire frame. Similarly, a docked window when made floating will remove itself from the default frame.

To make the window dockable again, right click the title bar and select Dockable.

Pushpin Controls

The pushpin icon pins the window to the edge of the frame. You can view the window by clicking its tab. If the screen's pin icon is horizontal , it may show partially and then re-hide. To make it show full screen click its pushpin again (so its position is vertical).

Other Screen Controls

Screen Controls are initially listed at the top of each module's help topic to orient you and familiarize you with the module. Some examples include:

Figure 2: Menu Choices

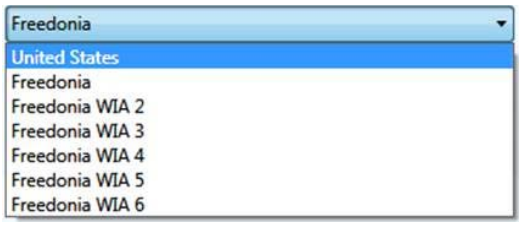


Figure 3: Drop-down menus

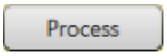


Figure 4: Buttons

Figure 5: Check boxes

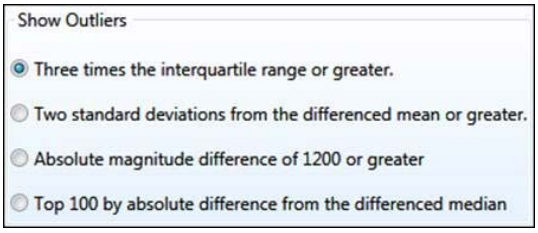


Figure 6: Radio buttons, also known as a control group in this documentation

Figure 7: Input Fields

Figure 8: Collapse and Expand Data Grid buttons

Figure 9: Sliders

Figure 10: Date Spinners

For more information on operating spinners, reference the Date Spinner Controls topic.

Active Module Toolbar

The Active Module Toolbar has choices to export, print, record notes, or access the help documentation, using the data created by the active module.

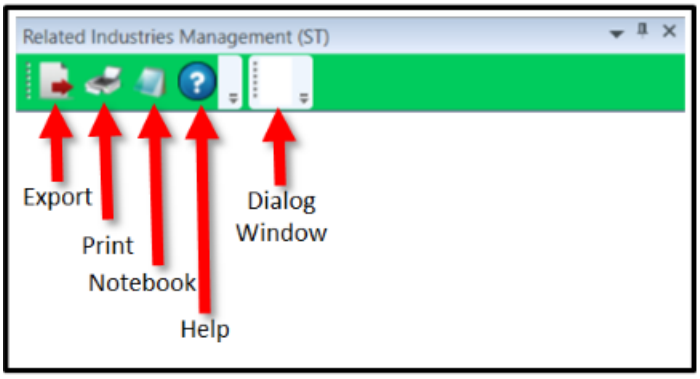


Figure 1: Active Module Toolbar

☞Not all tools are available in every instance of the Active Module Toolbar. The toolbar is contextual, its options based on which module you are currently running.

- **Export Icon -** Used to export data to spreadsheets, external files, or between Projections applications (i.e., Occupational Projections to Report Manager).
- **Print Icon -** Prints reports, spreadsheets, or notes.
- **Notebook Icon -** Access the Notebook module. The Notebook option is not available in Long Term Projections application.
- **Help Icon -** Different from the Getting Started menu option, the Help Icon will automatically open the associated help information for the currently selected module.
- **Dialog Window -** Displays system information messages, based on the current module and activity.

Date Spinner Controls

Date spinner controls are in many of the Projections Suite modules. They are used to adjust data and analysis dates. They are typically displayed in pairs as From and To date spinners, but can be displayed in several combinations. Click the up and down arrows to adjust the time frame you wish to examine.

All date spinners are accompanied by a Max button. Click the Max button to automatically view the longest time frame possible based on available data, or reset a zoomed-in graph.

Utilize a Display Date Spinner

1. Click the Display From: year spinner until the year is set.
2. Click the Display From: quarter/month spinner until the correct value is set.
3. Click the To: year spinner until the year is set.
4. Click the To: quarter/month spinner until the correct value is set.
5. Click the Max button to start over, or set the longest time frame possible.

Figure 1: Display From and To date spinners

☞Throughout this manual, changing the year using the spinner control is described as using the spinner arrows  . The year can also be changed by treating the spinner control as an input field. Clicking onto the actual date allows typing a new date into the control. Press the **Enter** key to accept the new value.

Select Chart Dates with the Mouse

Besides using Date Spinner Controls, data on graphs can be examined in more detail by selecting the time series with the mouse cursor.

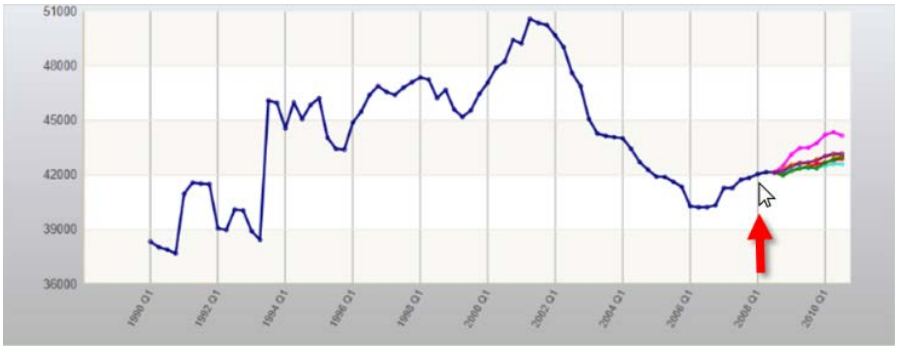


Figure 1: Start by holding the left mouse button at the starting date of interest (2008 Q1)

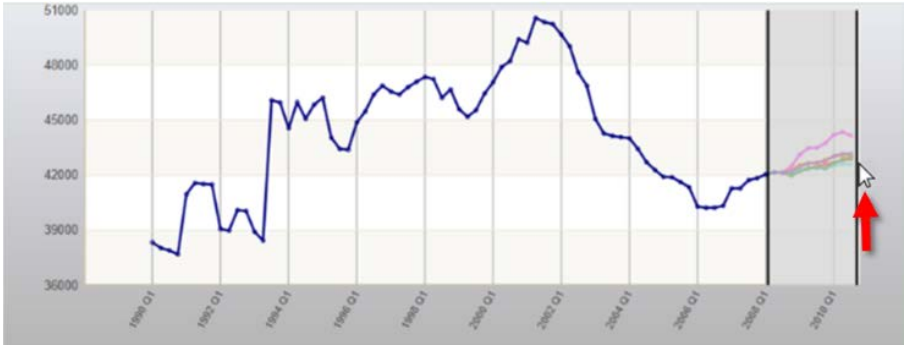


Figure 2: Drag the mouse to the desired ending date and release the left button

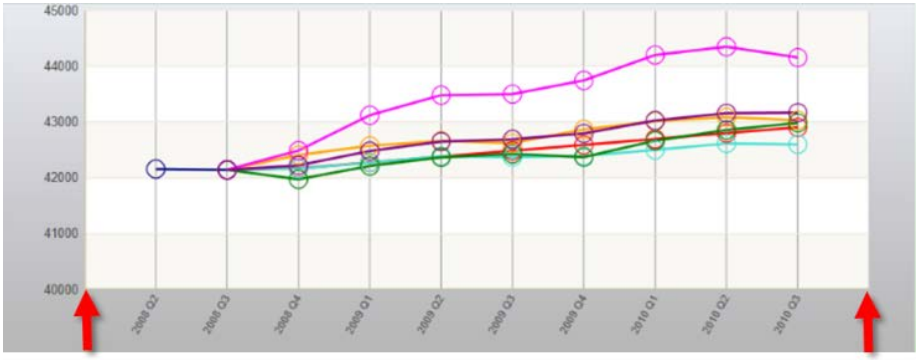


Figure 3: The chart will redraw, using the selected starting and ending date points (2008 Q1 past 2010 Q3)

☞Click the Max button to start over and view the longest time frame possible.

Graph Enhancement Controls

Graph Enhancement Controls are available in several modules throughout Projections Suite. Their purpose is to apply statistical overlays on top of calculated/projected data. They are referenced often in the documentation and demonstrated here.

There are five options to enhance your graph:

- Mean
- Best Fit
- Minimum/Maximum (Min/Max)
- Trend
- Standard Deviation (Std. Dev.)

They are displayed at the bottom of graphs in the following layout:

Figure 1: Graph Enhancement Controls

Mean

This line represents the average value of the provided data. The Mean will be displayed as a green line through the center of your graph:

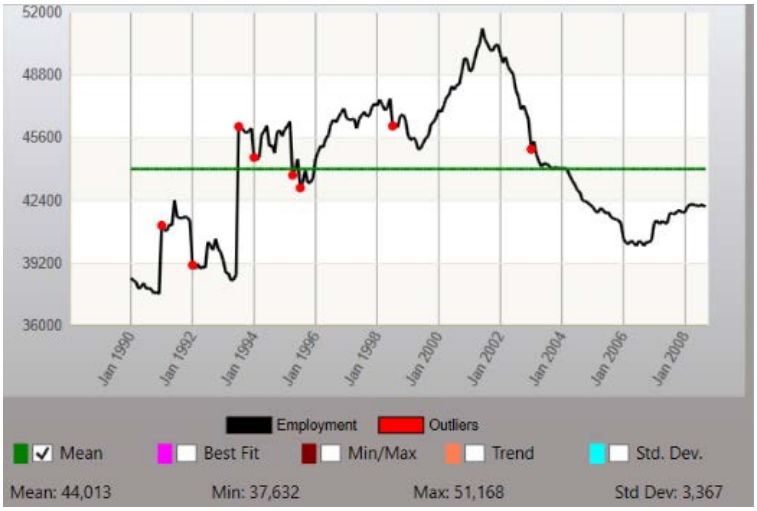


Figure 2: Mean selected

Best Fit

Displayed in pink, the Best Fit measures the relationship between the mean value and the corresponding values of all other variables. Clicking the Best Fit check box will overlay a calculation based on a linear model. If you select a linear model in Projections and click Best Fit, the statistical line should line up with the projection (demonstrated in Figure 3).

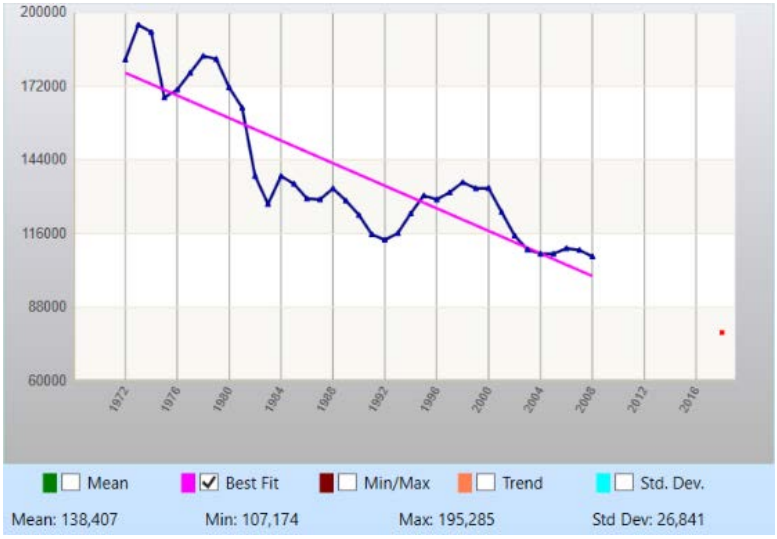


Figure 3: Best Fit selected

Min/Max

The Minimum/Maximum is displayed in brown. These two lines attain the bounds of the upper and lower threshold, within which all other data values are contained.

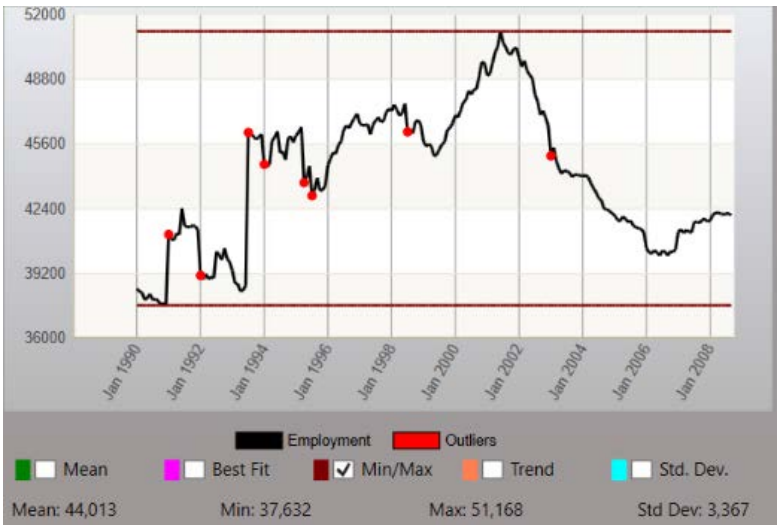


Figure 4: Minimum/Maximum selected

Trend

The Trend displays in orange. For many time series, two important components are seasonal variation, which is periodic change usually in yearly cycles, and *trend*, which is the long-term change in the seasonally adjusted figures. The Trend check box calculates its line based on a polynomial model. If you choose a polynomial model and click Trend, the statistical line should line up with your projection (as demonstrated in Figure 5).

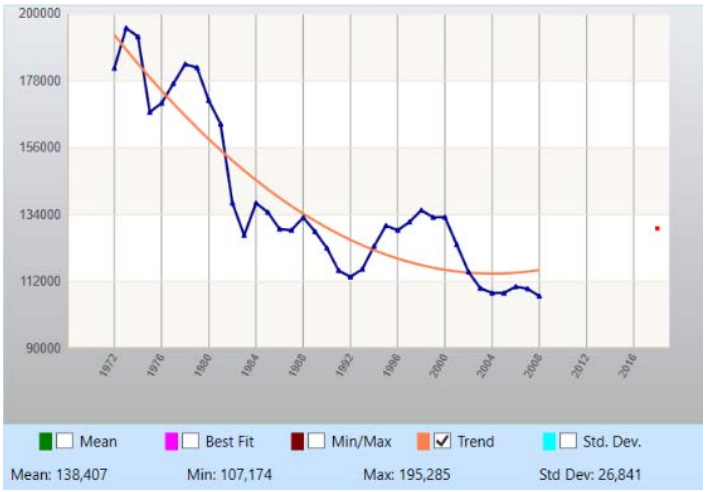


Figure 5: Trend selected

Std. Dev.

Standard Deviation (Std. Dev.) is displayed in blue. Standard Deviation is the positive square root of the variance, a commonly used measure of the dispersion of observations in a sample. Checking Standard Deviation draws two lines at one standard deviation above and below the mean.

Figure 6: Std. Dev. selected

Multiple Selections

Multiple Graph Enhancement Controls can be selected at once, to further interpolate the data or enhance your presentation. Up to all five controls can be selected simultaneously.

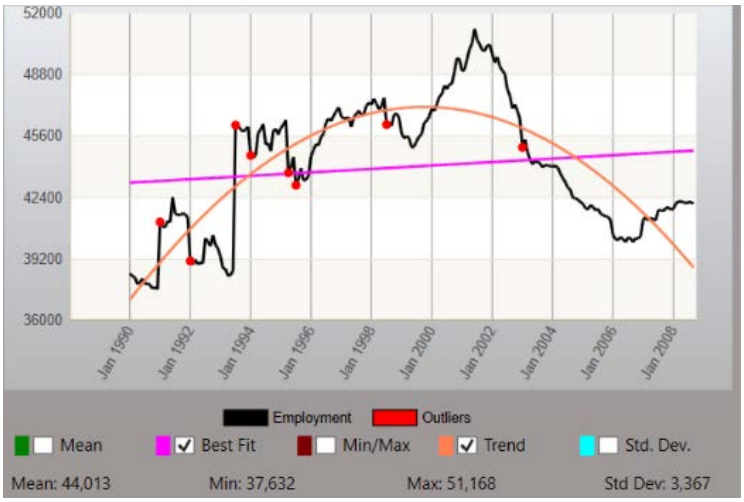


Figure 7: Multiple Graph Enhancement Controls selected

Related Content

- Time Series (LT)

Select Multiple Items

Throughout Projections Suite, selecting more than one possible choice for a process may be desirable. To do this (where it is available), use the following steps:

Select Items in a Continuous Range

1. Click the first item to be selected.
2. Hold down the **Shift** key.
3. Click the last item to select. This selects the entire range of items.

Select Items in a Non-Continuous Range

1. Click the first item to be selected.
2. Hold the Control (**Ctrl**) key down (keep it held down during the entire selection process).
3. Individually, click each item to be selected.
4. Release the Control (**Ctrl**) key. This selects the individual items only.

☞Be careful! Clicking on an item without holding down the Shift or Ctrl key will result in all previously selected items to be deselected. The selection process will need to begin again.

Short Term Industry Projections

Short Term Industry Projections Introduction

Short Term Industry Projections (STIP) examines the methods and models involved in forecasting two-year industry employment projections for a state or sub-state area. The STIP application helps state analysts develop industry employment projections that can be reported or that can be applied to occupational staffing patterns. Projections show trends for industries and provide information helpful to users in making education, job training, and career decisions.

Information about Short Term Industry Projections is available on the Projections Central Support site, under STIP Resources. The STIP Resources contains useful checklists, monthly national variables, and various tips. Use these resources to get started with Short Term Projections.

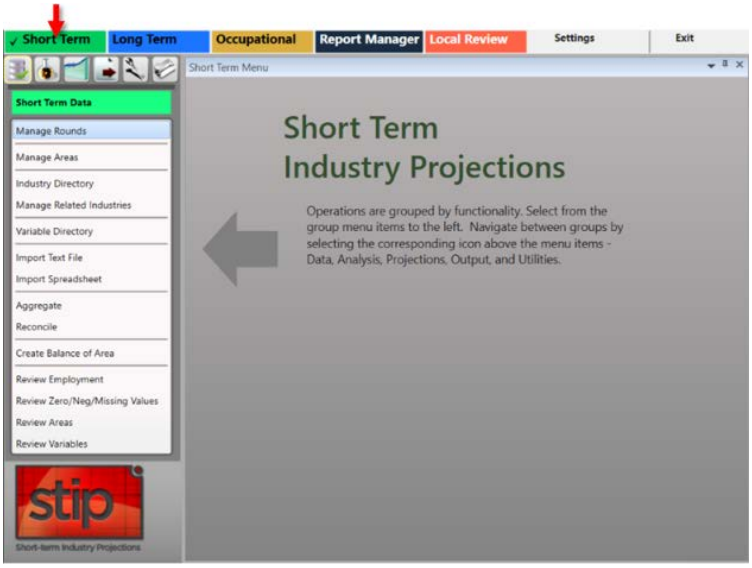


Figure 1: Short Term Industry Projections application

The Short Term Industry Projections application contains 41 modules under the following group menu selections:

- Short Term Data (F5)
- Short Term Analysis (F6)
- Short Term Projections (F7)
- Short Term Output (F9)
- Short Term Compare (F12)
- Short Term Utilities (F11)

Create a Short Term Industry Projection

This section is meant to be an end-to-end guide for creating a Short Term Industry Projection. Visit the STIP Resources page on the Projections Central Support website for additional, helpful information when producing Short Term Projections.

Produce Short Term Industry Projections

1. Pre-Projection Decisions and Adjustments

These decisions and adjustments should be made before starting to produce industry employment projections or forecasts.

Use Manage Rounds to set or modify rounds and to determine discrepancies associated with the imported data.

Use Manage Areas to set the geographic coverage:

- Area Set Up - predefined areas
  - States
  - Counties
  - Metropolitan Statistical Areas
  - Micropolitan Statistical Areas
- Area Set Up - user defined areas
- Area Groups - user defined grouping of existing areas

Directories

- Industry Directory

  Industry codes cross-walked from NAICS codes. Use to review or adjust industries.

- Variable Directory

  Use to review or adjust variables for use in the Projections process.

2. Import Data

- Use the Import Spreadsheet module to import employment data series and variable data.
- Employment Series File: The file may be populated with QCEW, CES, or any user-defined monthly historical series.
- You must have the State industry employment series. If you have monthly data, Aggregate by time to create an annual series. For Short Term, you must have the state industry monthly employment series with at least 4 years of data. Monthly data can be rolled up to annual data for use in Long Term.

- Import the National Economic Variable Spreadsheet. This data is available on under STIP Resources on the Projections Central Support website.

3. Review and Edit Data

- Preview Employment to add, edit, or delete data.
- You must have industry "000000 - Total All Industries" employment in your employment series. You may use Aggregate to roll-up data.
- The Data and Analysis menu categories are necessary to evaluate historical data.
- The Analysis menu category is used to evaluate employment and variable data.
- Review variable data to add, edit, or delete data.

4. Develop Short Term Industry Projections

- Evaluate and select Leading Index variables for use in projections models.
- Use Project Single Region to project the state industry or sub-state area as a single region. Select the models, analyze results, and save projections. All industries must be completed and saved.
- Use Project Multiple Regions if projecting sub-state areas.

5. ICT Export

- Use ICT Export to transfer ICT data to Occupational Projections.

Short Term Data Menu Items

Short Term Data Introduction

The **Short Term Data** group menu enables the management of rounds, areas, industries, and variables. Data importing, manipulation, and review tools are also available.

Figure 1: Short Term Data group menu

The Short Term Data group menu contains the following selections:

- Manage Rounds
- Manage Areas
- Industry Directory
- Manage Related Industries
- Variable Directory
- Import Text File
- Import Spreadsheet
- Aggregate
- Reconcile
- Create Balance of Area
- Review Employment
- Review Zero/Neg/Missing Values
- Review Areas
- Review Variables

Manage Rounds

Use the **Manage Rounds** module to define a projection period, based on a specific time frame for completing Short Term Industry Projections. A Short Term Projections round will include a two-year period following the base period (the last ending month of the employment series), and a title to describe the round.

You may have as many rounds defined as you need, and you can define multiple rounds for the same base period. Defining rounds for the same base period allows you to do projections with different scenarios.

> ☞It is very important to remember to select a round before processing any data in the system.

Screen Controls

- **Select current round** drop-down menu
- **Right click menu** choices
  - **Add**
  - **Edit**
  - **Delete**

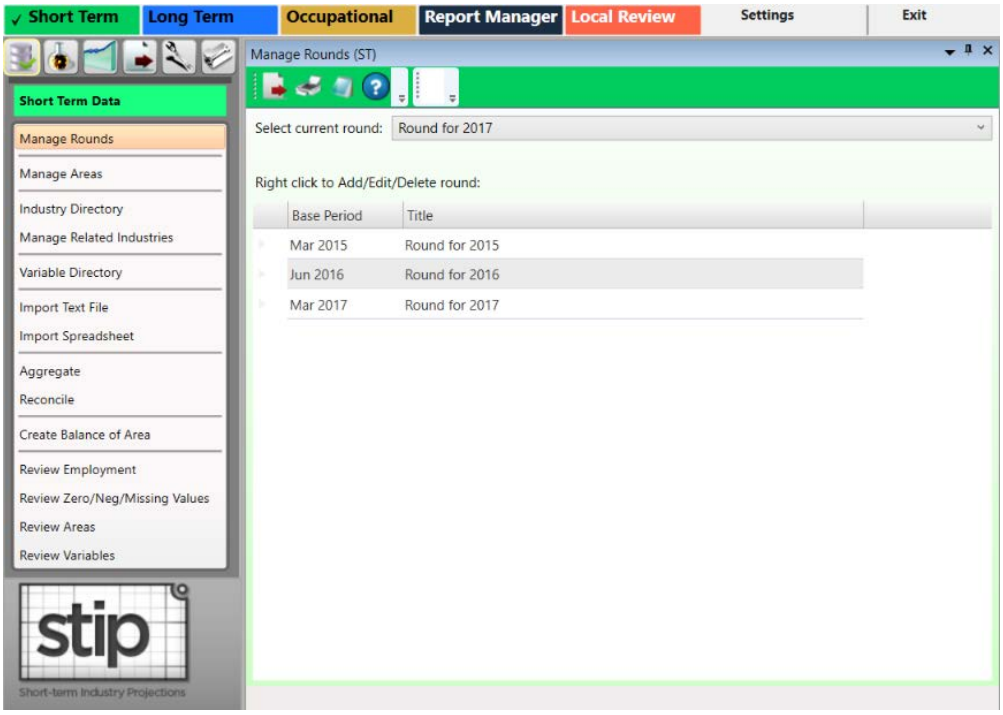


Figure 1: Manage Rounds module

Add a New Round

1. **Right click** the background of the **Manage Rounds** screen to open a context menu.
2. Select the **Add** option.
3. Type the monthly **Base Period** of the new round. The base period is the month and year where the employment series data will end. This is typically at the end of the quarter.
4. **Tab** into the Title field and type a **Title** for the new round. The title can be any description that easily defines the round.
5. Press the **Enter** key to save the round. **Right click** and select **Cancel Add** to cancel adding the round.

Edit a Round

1. **Right click** a round to edit it.
2. Select the **Edit** option from the context menu.
3. Update the information and press **Enter** or **Tab**.

Delete a Round

1. **Right click** the round you want to delete.
2. Select the **Delete** option from the context menu. The **Delete Record** dialog box will be displayed.
3. Click **Yes** to delete the round. Click **No** to keep the round.

☞Use caution when deleting rounds that have data connected to them.

Export Round Data to a Spreadsheet

1. Click the **Export** icon on the Active Module Toolbar. A **Save As** dialog box will be displayed.
2. Enter a name for the file and navigate to the location to save the data.
3. Click **Save**. This creates a spreadsheet listing all the rounds defined in the system.

Related Content

- ICT Export
- Variable Directory

Projections Suite

- Project Single Region
- Project Multiple Regions

Manage Areas

Use the **Manage Areas** module to select and customize areas for Industry and Occupational Projections. Manage Areas organizes the basic geographical areas your projections will be calculated from. You can select your state, add or change area types, add sub-state areas, and create Area Groups. Area Groups are used in sub-state projections and the Project Multiple Regions (ST and LT) modules.

The Manage Areas module is available in the Short Term, Long Term, and Occupational Projections applications. The changes you make in any of these modules will populate throughout the applications.

Screen Controls

Area Setup section

- **Right Click Context Menu** (United States)
  - **Show All States**
  - **Hide Unchecked States**
- **Right Click Context Menu** (state)
  - **Show All Area Types**
  - **Show Area Types with Areas**
  - **Add Area Type**
  - **Create Area Group**
  - **Print Area Types**
  - **Print Areas**
  - **Print Area Groups**
- **Right Click Context Menu** (Substate)
  - **Add Area**
  - **Edit Area Type**
  - **Print Area Types**
  - **Delete Area**

Area Groups section

- **Right Click Context Menu** (Highest Level)
  - **Delete Area Group**
  - **Print Area Groups**
- **Right Click Context Menu** (Substate)
  - **Delete Area Group Member**

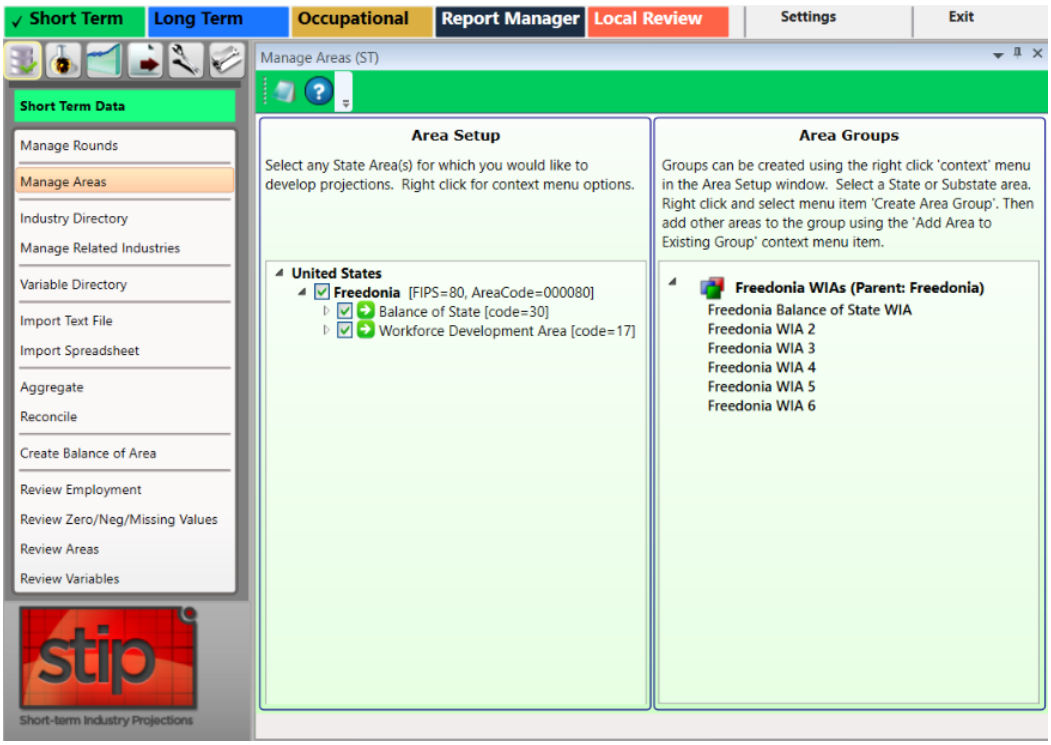


Figure 1: Manage Areas module

Area Setup Section of the Screen

1. **Right click** the **State Area** you want to work with to open its context menu.

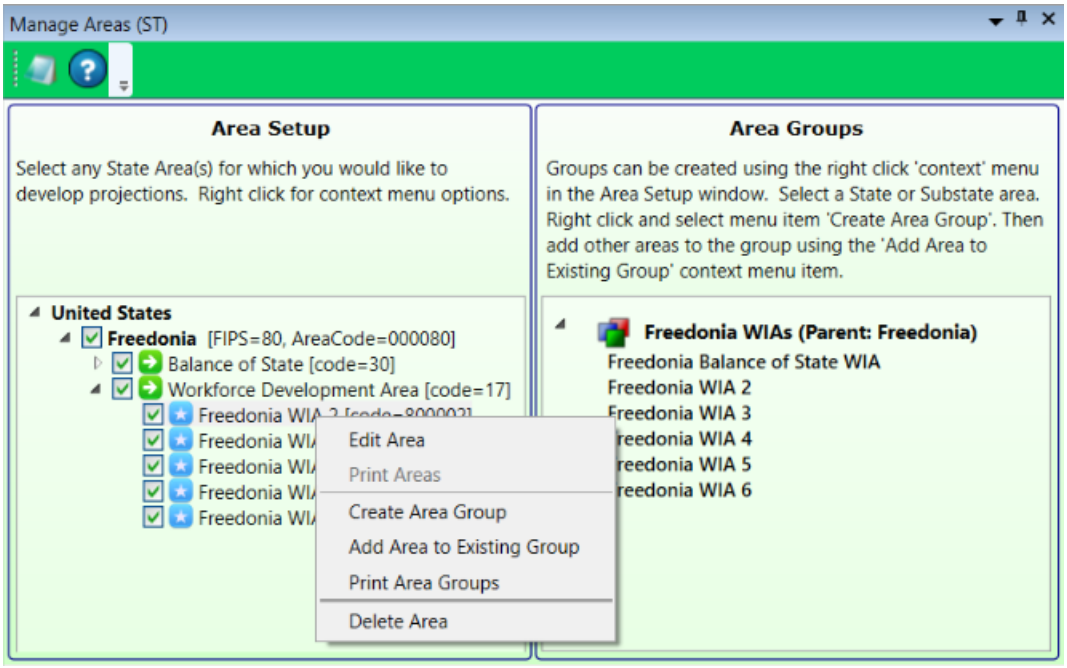


Figure 2: Context menu for working with State Areas

Depending on the changes needed to this area, click the appropriate option from the following:

- Edit Area
- Print Area
- Create Area Group
- Add Area to Existing Group
- Print Area Groups
- Delete Area

Edit an Area

1. Click **Edit Area**. The Edit Area dialog box will display:

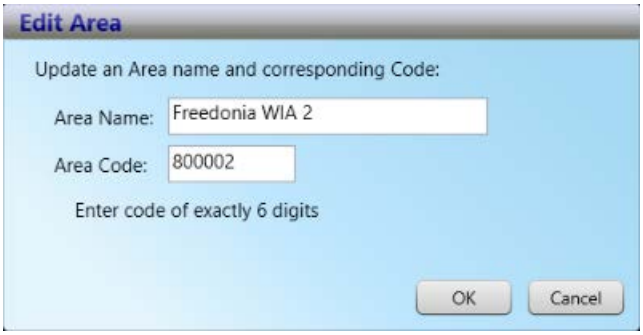


Figure 3: Edit Area dialog box

2. Change the **Area Name** and/or **Area Code**.
3. Click **OK**.

Print Areas

1. Select **Print Area Groups** from the context menu. This menu choice is accessed by right-clicking the second highest level (Freedonia, in this example) in the **Area Setup** section. The **Print Preview** screen will be displayed.
2. Click the **Print** icon to print the area's data.

Create an Area Group

1. **Right click** on the 2nd level in the **Area Setup** screen section.

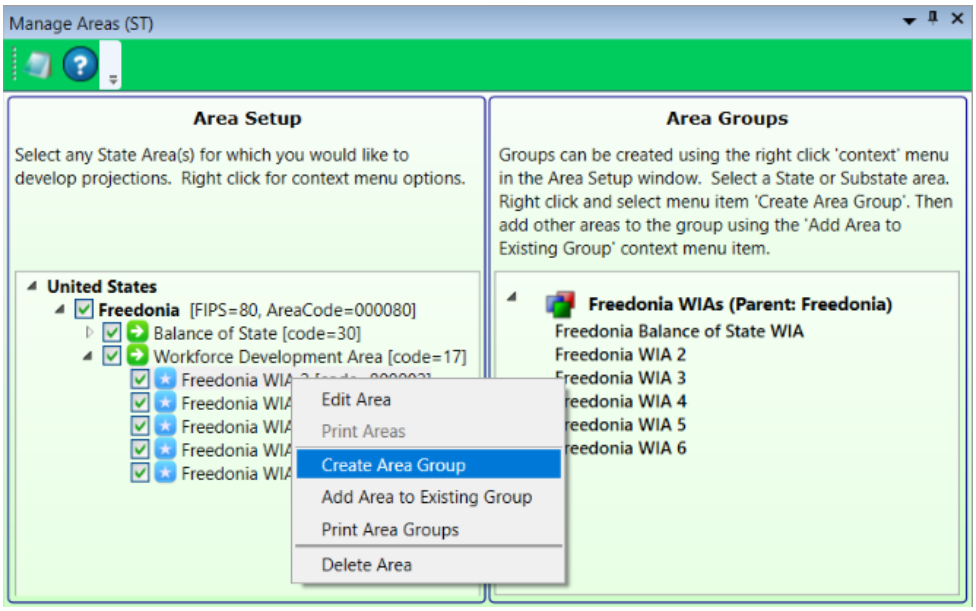


Figure 4: Create Area Group, to add to the Area Groups screen section

2. Click **Create Area Group**. The **Create Area Group** dialog box will be displayed:

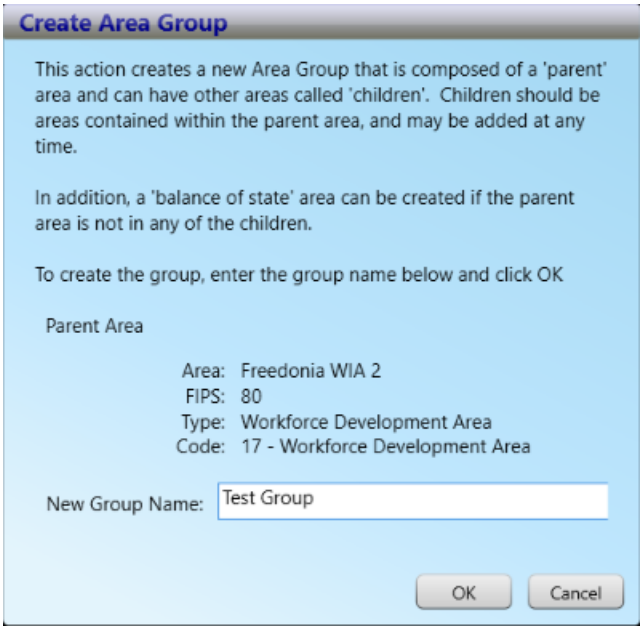


Figure 5: Create Area Group dialog box

3. Name the new **Area Group**.

4. Click **OK**. This will add the new Area Group (named Test Group, in this example) to the **Area Groups** section of the screen.

Figure 6: The new Area Group (Test Group) is added

5. Continue adding areas to the Area Group by **right-clicking** and selecting **Add Area to Existing Group** from the context menu. Select a group from the drop-down menu to add the area to the Area Group, then click **OK**.

Delete Area

1. **Right click** on the area to select it.
2. Select **Delete Area**. The following dialog box will be displayed:

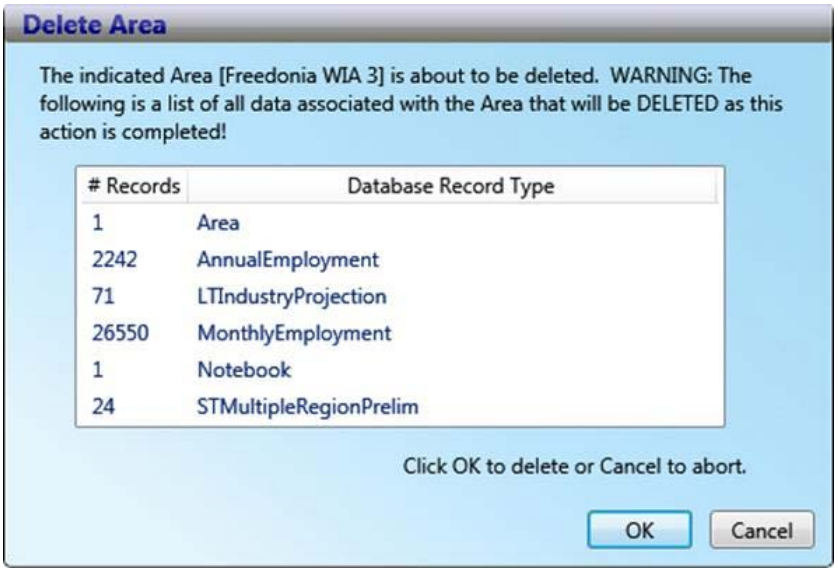


Figure 7: Delete Area dialog box

3. To delete the area, click **OK**. Click **Cancel** to keep the area.

Delete an Area Group

1. **Right click** the **Area Group** to select it for deletion.

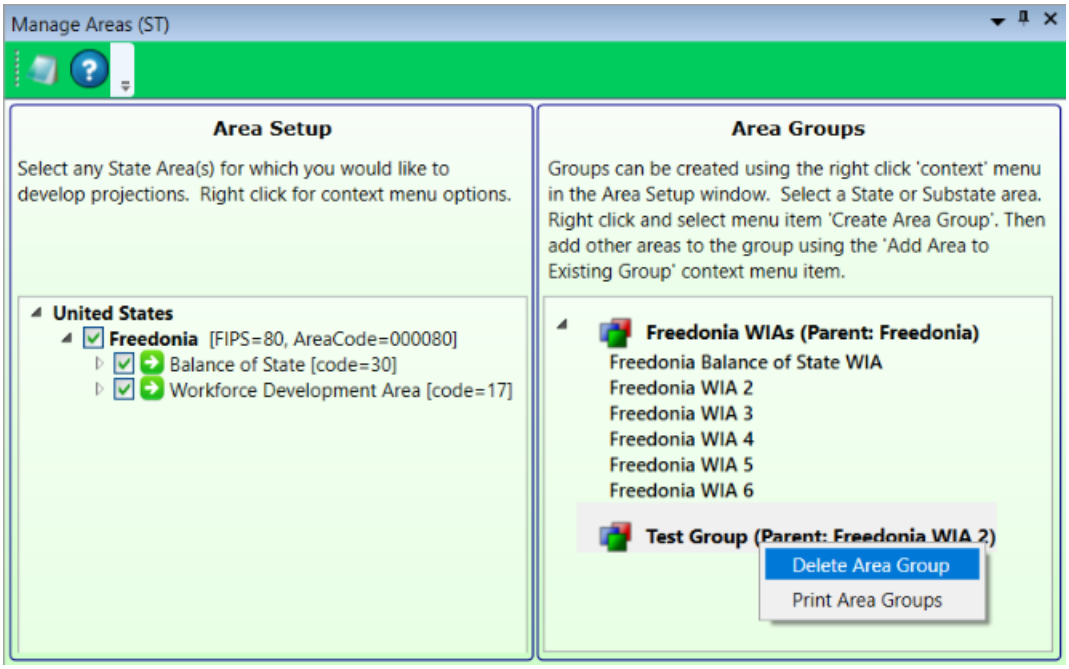


Figure 8: Delete the Area Group, Test Group

2. Select **Delete Area Group** from the context menu. You will be prompted to confirm the deletion.
3. Click **OK** to confirm. Click **Cancel** to keep the Area Group.

View Area Types

It may be helpful to view the various area types when initially setting up your Projections software, to determine the best way to classify your areas. To view all area types:

1. **Right click** your state and select **Show All Area Types**. This will list all of the area types and their associated codes in the Area Setup section.

Figure 9: All area types

2. When you are finished, close the list by **right-clicking** your state and selecting **Hide Area Types With No Areas** from the context menu.

Related Content

- Create Balance of Area
- Review Areas
- Project Multiple Regions (ST and LT)
- Area Format

Industry Directory

Use the **Industry Directory** as a resource for information about specific industries, listed by NAICS. The Industry Directory lists all valid industry codes and titles in a tree view. All Projections Suite applications use it for defining industries. A default Industry Directory is installed with the Projections Suite.

Analysts can modify the directory as needed for your state. However, the position of industries in the industry tree is critical. When adding or moving industries, ensure you place them correctly within the parent industry. Industry placement will affect aggregation of employment data in later projections steps.

The Industry Directory module is available in the Short Term, Long Term, and Occupational Projections applications. The same screen displays in each application.

Screen Controls

- **Print all industries** check box
- **Search for** field
- **Find** button
- **Expand/Collapse** arrows

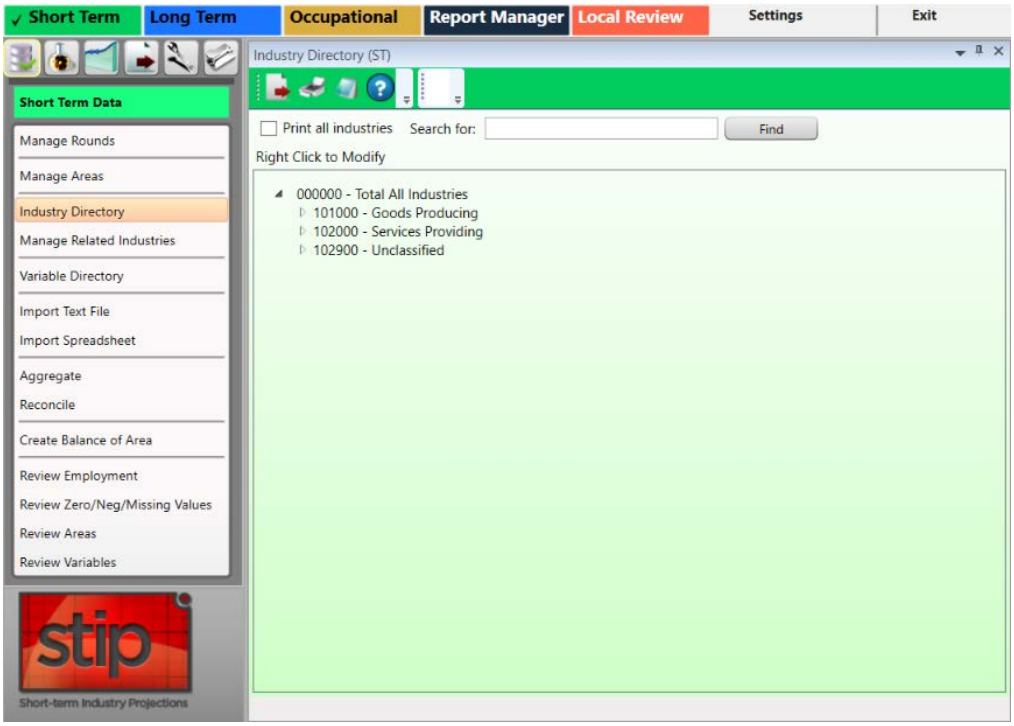


Figure 1: Industry Directory module

The **Total All Industries** code is displayed at the top of the tree. Beneath **Total All Industries** are the NAICS codes for Super-Sectors (2-digit), sectors (3-digit), and detailed industries (4 - 6 digit).

Manually Expand/Collapse the Industry Hierarchy

1. Click the **Expand** icon next to the general category of the industry. The category will expand one level.
2. Continue clicking the expand icons in that category until the desired industry level is displayed.
3. Click the **Collapse** icon on the category header to collapse to that level.

Use the Search Tool

1. Click into the **Search for** field.
2. Type an industry description or industry code.
3. Click the **Find** button or press **Enter**. The designated industry will be displayed if it is listed in the industry hierarchy.

Figure 2: Using the Search for field

Figure 3: Use a description to find an industry

Additional Options in the Industry Directory

There are various options in the Industry Directory to help customize industries. To customize the Industry Directory:

1. **Right click** on an entry in the Industry Directory. Depending on which industry level you've selected, one of two context menus will be displayed.

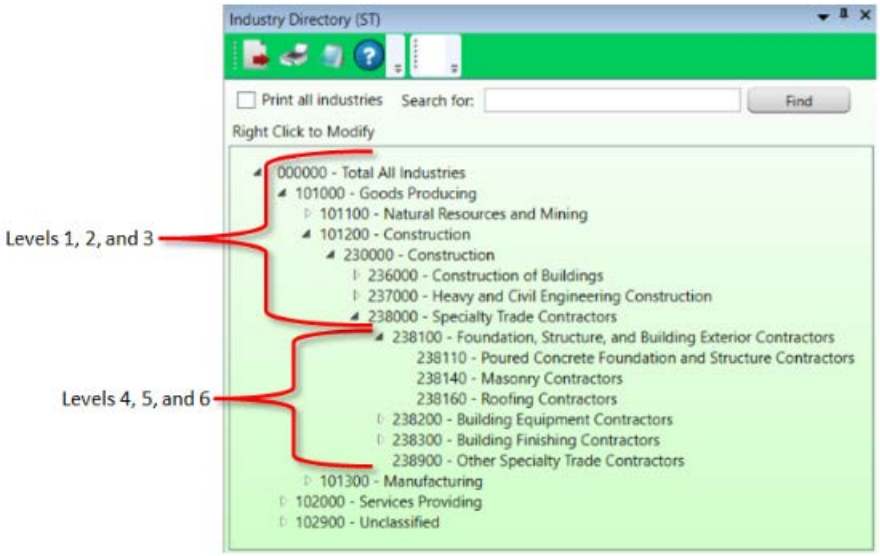


Figure 4: Industry Directory breakdown

The context menus contain the following items:

- **Expand all children** will expand the selected entry to the sixth level.
- **Collapse all children** will collapse all entries within the selected entry.
- **Add** enables the addition of new industries to the selected entry. Ensure their placement is correct to avoid future aggregation issues.
- **Cut** will remove the selected entry and copy it to the clipboard for pasting into another area.
- **Delete** will delete the selected entry.
- **Edit** enables editing of a selected entry.
- **Move** allows the selected entry to be moved to another location in the directory.
- **Paste** will paste a previously cut industry into another area in the hierarchy.

Manage Related Industries

Use the **Manage Related Industries** module to view and edit Related Industries for specific areas and industries.

The default set of related industries is included during system installation and can be used to help you determine industry assignments, but they must be assigned to be used in the projections process. The default list includes a set of industries, assigned to specific industries, selected by national experts. These lists can be used as a starting point for assigning related industries, then adjusted for each area/industry combination. Related industries are used as variables in the projections process when the **Related Industries** model is selected in OLS, VAR, or BVAR model types.

A related industry marked with a red flag indicates the industry has no employment data and should not be included in projections calculations. Either delete the industry from the list or import data for the industry. If a flagged industry remains in the list, an error will occur when trying to project an industry using the Related Industries model.

Screen Controls

- **Select an Area** drop-down menu
- **Assign Defaults to all Industries** button - Assigns pre-set Related Industries to all industries in the selected area
- **Select an Industry** drop-down menu
- **Remove All Related Industries** button - Eliminates all related industries for the selected area
- **Arrow** buttons

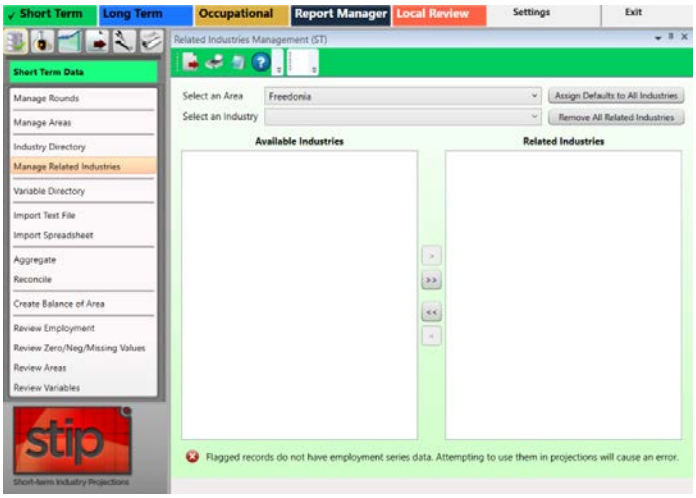


Figure 1: Manage Related Industries module

Assign Default Related Industries to an Area

1. **Select an Area**.

2. Click the **Assign Defaults to All Industries** button. By assigning the default, you are saying you want to use the default set of related industries.

3. A confirmation dialog will display. Click **Yes** to assign default industries. Click **No** to cancel.

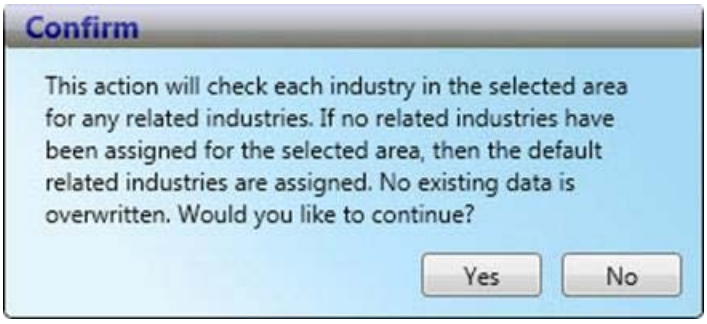


Figure 2: Confirm dialog box

☞Default related industries are typically defined for 3-digit industries, but may not be present for all 3-digit industries. More detailed industries (4, 5, and 6-digit) will not have default related industries assigned. This means that, at the national level, they have not determined which (if any) related industries should be assigned.

☞If the area/industry selection already has related industries assigned, the **Assign Defaults** button will not overwrite the relationships between these industries. This protects custom assignments.

View and Edit an Industry's Related Industries

1. **Select an Area** and **Industry** from the drop-down menus. The available industries for those choices display in the **Available Industries** table. In Figure 3, you can see that no default industries have been assigned to industry 519000 - Other Information Services in the **Related Industries** table.

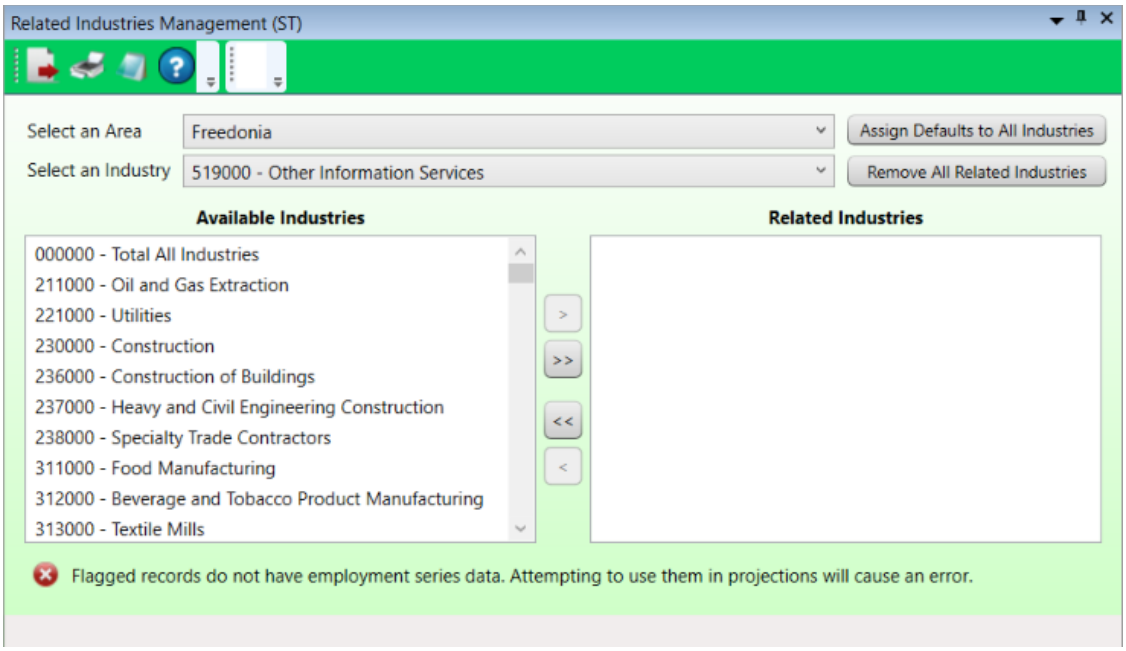


Figure 3: Available Industries are displayed

2. Select industries in the **Available Industries** table to move into the **Related Industries** table. Industries can be moved one at a time or in multiple selections.

3. Use the **arrow** buttons to move the selected industry or industries to or from the **Related Industries** table.

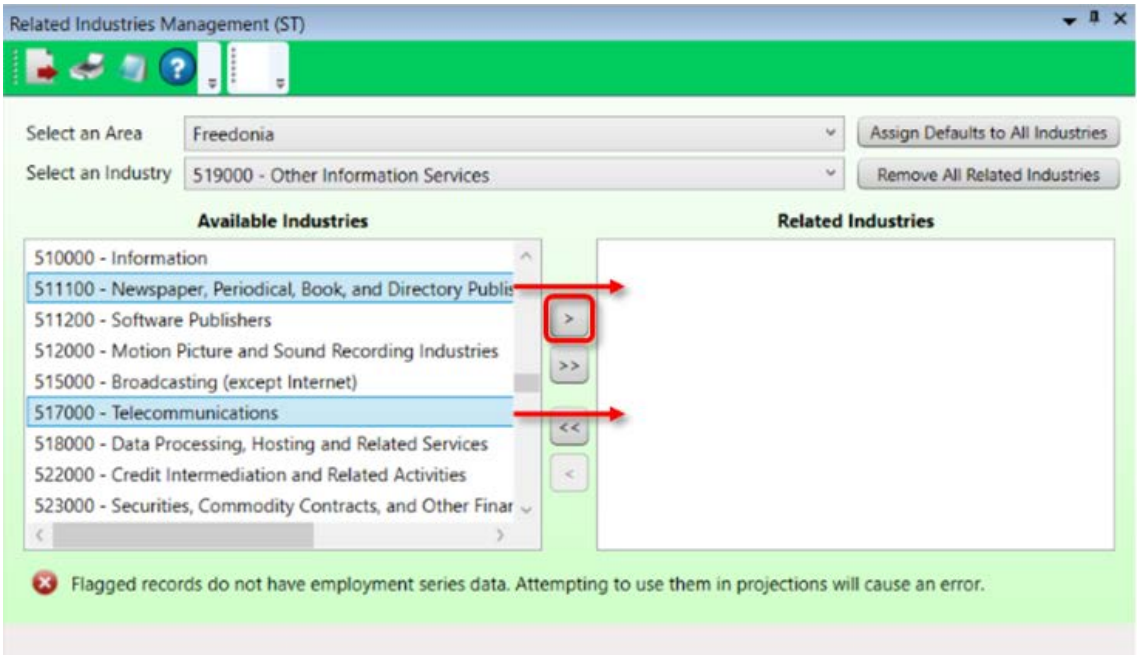


Figure 4: Select Related Industries

The industries in the Related Industries table and the selected industry are now related. These industries will now be used as variables in the projections process when the **Related Industries** model is selected in OLS, VAR, or BVAR model types. Typically, you do not want too many variables, so the Related Industries table should be kept to a minimum (no more than 4 or 5 industry selections).

Context menu items are also available to assist in selection by right-clicking the **Available** and **Related Industries** tables:

Available Industries table

- Add Selected
- Select All
- Unselect All

Related Industries table

- Remove Selected
- Select All
- Unselect All
- Add Default Industries - add any default industries that were previously removed
- Update Default Industries - update the default related industries list. Any subsequent adding default industries to other areas will use the new values.

Remove All Related Industries

1. Click the **Remove All Related Industries** button. A confirmation message will be displayed.
2. Click **Yes** to remove the industries. Select **No** to cancel.

Variable Directory

Use the **Variable Directory** to create, edit, and delete the monthly variable definitions used in the projections process. Short-term variable types are National, State, or Regional.

Variable data can be imported as a spreadsheet. Match variable names on spreadsheets exactly; misspellings will cause a new variable to be created in the directory. View a variable file format example by clicking here.

The Short Term application comes with a default set of national variables, as well as data for each of those variables. The national variables are updated about every three months. National variables are available on the Projections Central Support web site under STIP Resources, Supplemental Files (Short-Term Monthly National Variables Time Series - USVariables.zip). Update the variables whenever you update the employment series, so the data match the ending date set for the round in the Manage Rounds module.

State and Regional variables are imported or created in the Variable Directory module and it is up to the state analyst to compile data for these types.

Screen Controls

- **Select Variable Type** drop-down menu

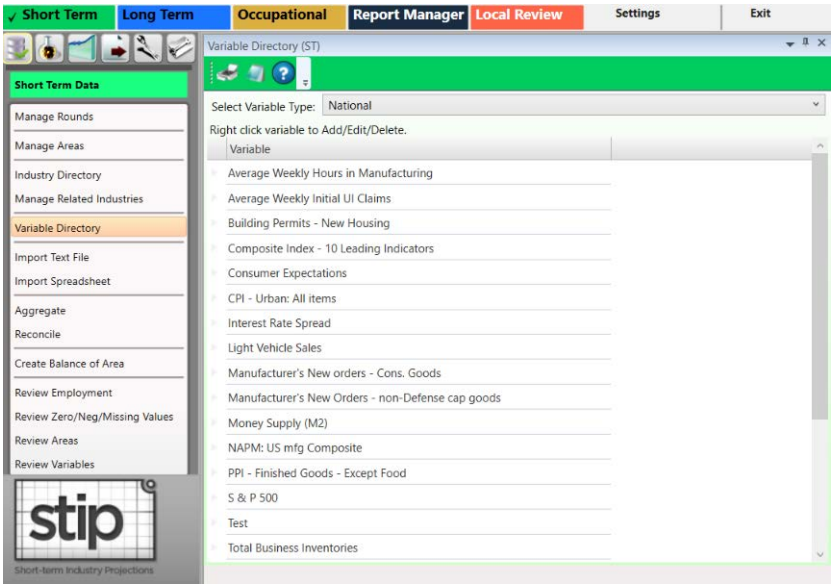


Figure 1: Variable Directory module

Add a Variable

1. **Select Variable Type** from the drop-down menu.
2. **Right click** the variable table and select **Add**.

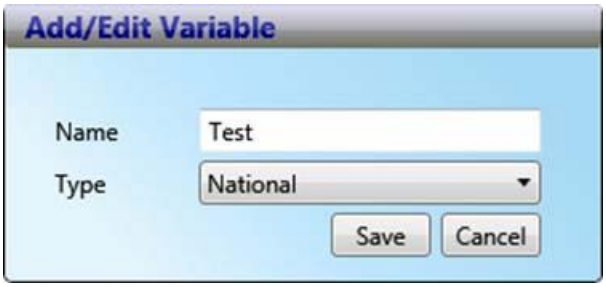


Figure 2: Add/Edit Variable dialog box

3. Enter a variable name (this must be a unique name that clearly identifies the variable).
4. Select the variable type (National, State, or Regional).
5. Click **Save**.

Edit a Variable

1. **Right click** the variable and select **Edit**.
2. Edit the variable name and/or type.
3. Click **Save**.

Delete a Variable

1. **Right click** the variable and select **Delete**. A dialog box will be displayed.
2. Click **Yes** to delete the variable. Click **No** to keep the variable.

☞Use caution when deleting variables. All data series associated with the variable will be deleted.

Related Content

- Review Variables
- Preview Variables
- Manage Rounds
- Export Variable Series
- Import Spreadsheet

Import Text File

The **Import Text File** module is only used to import Quarterly Census of Employment and Wages (QCEW) program data.

The file is created specifically for this import by running QCEW job ES2J247D (also known as job 247D). Request the file from your QCEW analysts by providing the parameters for the specific data you need. To save time, it is very important to extract data from the QCEW job output specific to the industry employment and area data required. The text file may have the needed data, but it may require importing into a spreadsheet file first to manipulate or clean up the data before importing it. If this is the case, use the import spreadsheet module to add the data to the database. Reference the QCEW Data Extract topic for additional information.

The Import Text File module is available in the Short Term and Long Term Projections applications. The same screen displays in each application.

Screen Controls

- **Select File to Import** field
- **Browse** button
- **Import** button
- **Change Font Size** slider

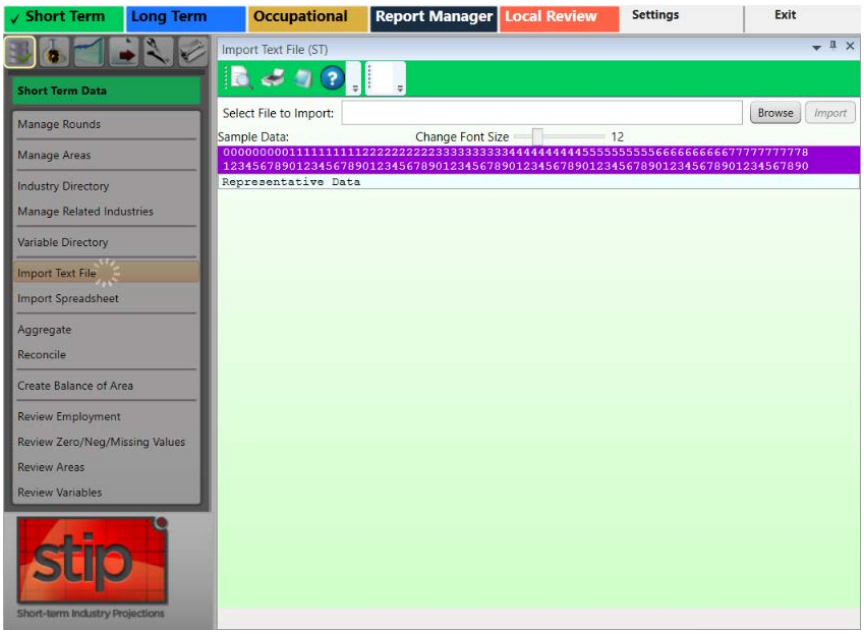


Figure 1: Import Text File module

☞The format of the text file to be imported must have the data elements of the table into which it is imported. The valid table formats are below. Click the appropriate link to see details:

QCEW Text Format

The QCEW text file format consists of a fixed set of 42 or 43 required columns, depending on the QCEW type (Expo202 or Win202, respectively). If the text file has fewer or greater number of columns, the application will display errors. For additional information about this format, click here.

Win202/MSA Text Format

The Win202/MSA format is similar to the standard QCEW format, except the area code has one additional column. The import software expects this format to have 43 columns. If the text file has fewer or greater number of columns, the application will display errors. For details about this format, click here.

Import Text File

1. Click the **Browse** button.
2. Select the text file and click **Open**. The first row of data will appear below the purple bar.

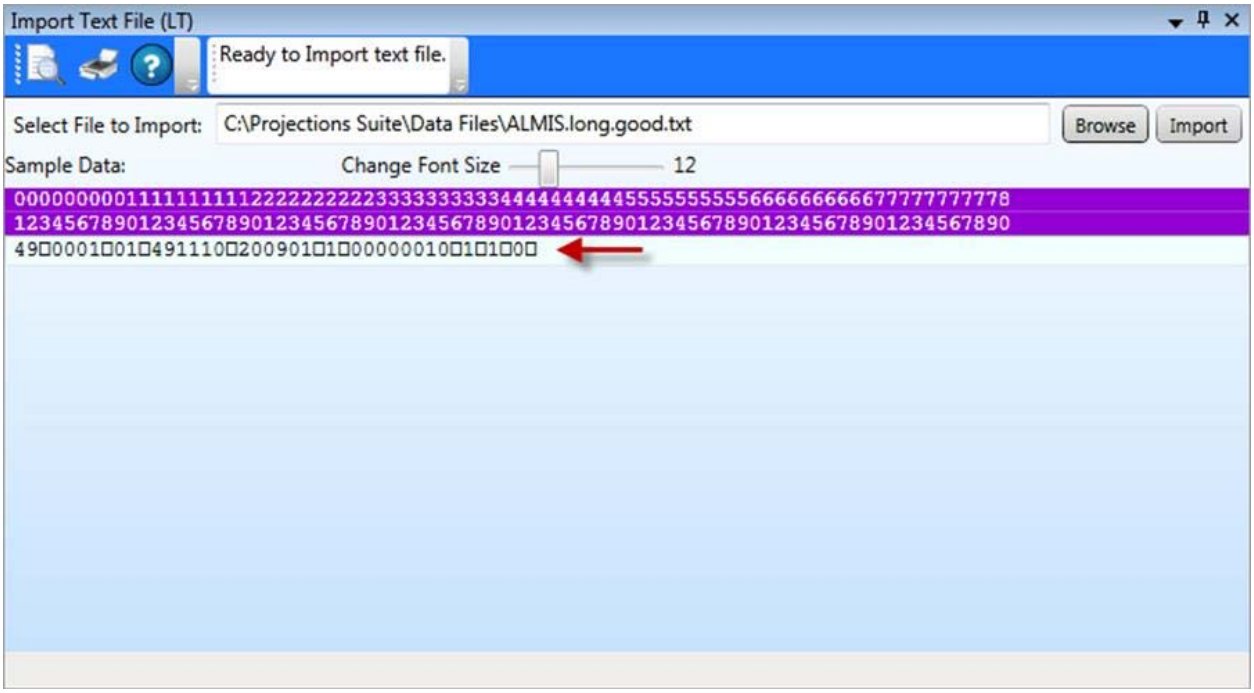


Figure 2: First row of data in file

Numbers in the purple bar are read top to bottom to indicate the column position they represent. For example, 0 and 1 is the first column position. 1 and 0 is the tenth column position. 2 and 5 is the twenty-fifth column position, and so on. These column positions help in explaining the data elements of the text file.

☞Click the **Preview** button on the Active Module Toolbar to preview the data in the text file.

3. If you are satisfied with the file layout, click **Import**. There are two places import information displays (see Figure 3):

- The Active Module Toolbar.
- A detailed data validation message/confirmation will be displayed in the message grid. These messages will provide information to determine the cause of import errors.

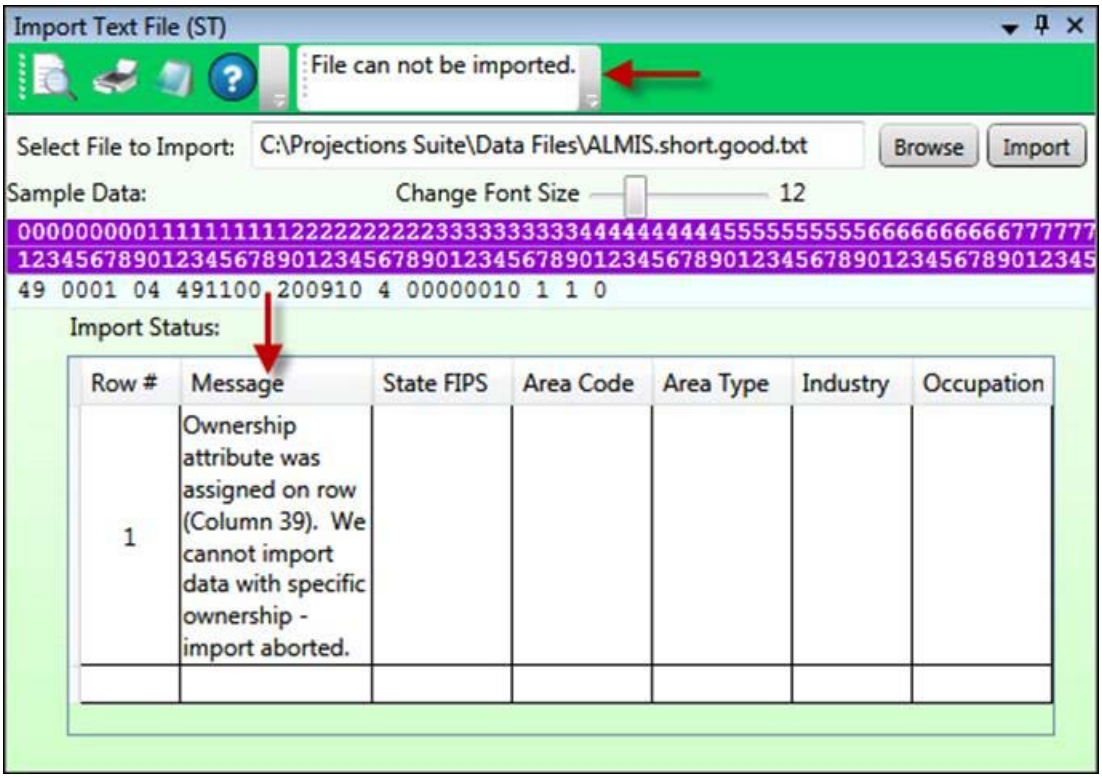


Figure 3: Data validation messages

4. If you are not satisfied with the file layout, click **Cancel**. The import will stop.

☞Once the data is imported, you can view it in the Review Employment module to verify the information is correct or resolve any problems if it is not.

5. Click the **X** in the top right corner to close the Import Text File module to enable the other group menu selections.

Related Content

- File Formats Introduction
- QCEW Output Text Format
- Win202/MSA Text Format
- QCEW Data Extraction Instructions

Import Spreadsheet

Use **Import Spreadsheet** to import various spreadsheet formats. This is the most common method for importing data. Spreadsheet file formats must be exact. For additional information and examples of file formats, reference the File Formats Introduction topic.

The Import Spreadsheet module is available in the Short Term and Long Term applications. The same general screen displays in each application, however, if you attempt to import data meant for use in the Short Term application while using the Long Term Import Spreadsheet module (and vice versa), you will be prompted to use the correct module for importation.

Screen Controls

- **Select File to Import** field
- **Browse** button
- **Import** button
- **Detected file type** field

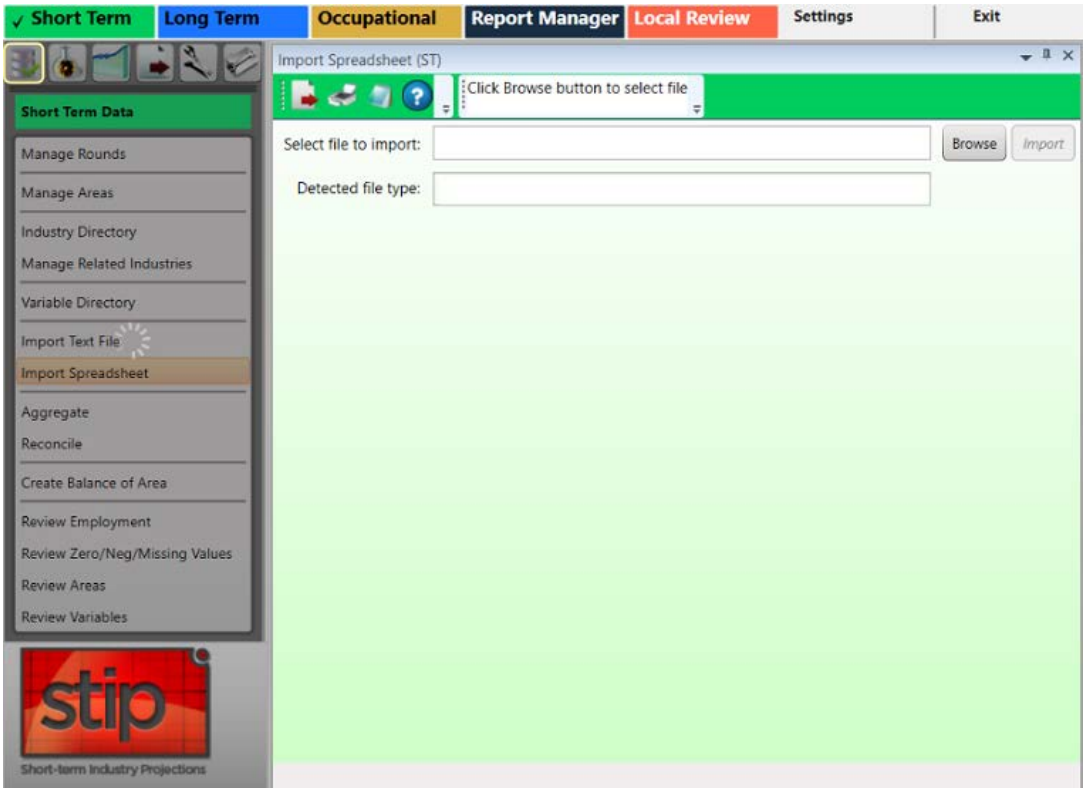


Figure 1: Import Spreadsheet module

Import a Spreadsheet

1. Click the **Browse** button.

2. Select the spreadsheet file and click **Open**. The system will validate the data and display the file type in the **Detected file type** field. Depending on the type of import, you will be prompted to classify variables and validation messages (if any) will display.

3. Click the **Import** button. An Import Spreadsheet dialog box will be displayed, indicating if the import was successful and how many usable rows will be imported.

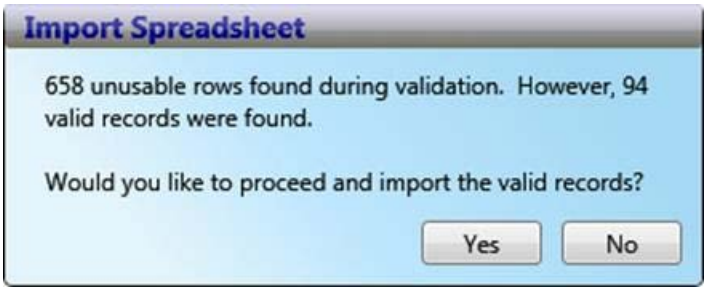


Figure 2: Import Spreadsheet dialog box

4. Click **Yes** to import the valid records. Click **No** to stop importing the records. Clicking **Yes** will display the Import Spreadsheet dialog box:

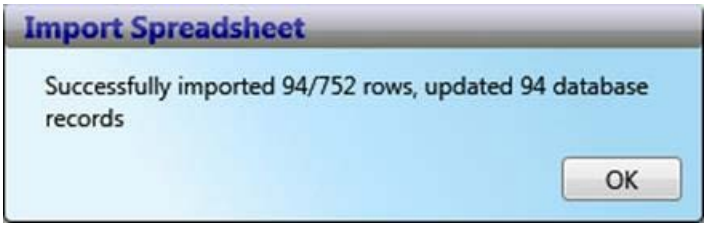


Figure 3: Successfully imported records

5. Click **OK**. Import Status messages will display in the message grid.

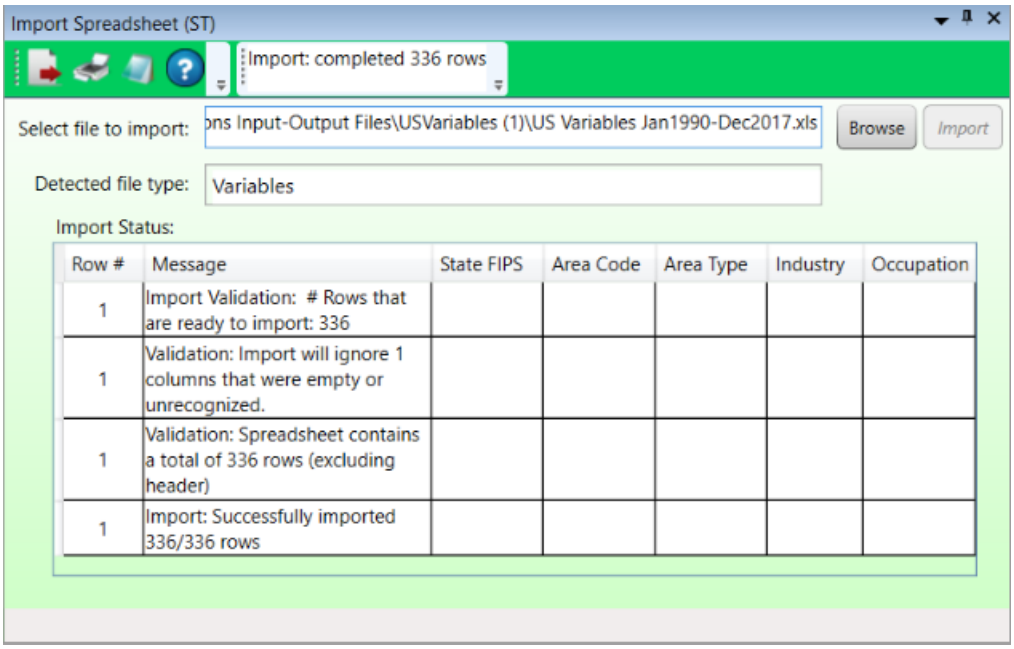


Figure 4: Import Status messages

6. Click the **X** in the top right corner to close the Import Spreadsheet module and enable the other group menu items.

Related Content

- File Formats Introduction
- Variable Directory

Aggregate

The **Aggregate** module is a tool for creating industry employment series within the system, rather than importing data from external sources. With the aggregation tools, you can create total industry series from more detailed industries and ensure that state total records are the sum of sub-state records. The Aggregate module allows the user to rollup data across selected areas, industries, and time. For example, if employment information is imported for 3-digit industries, you can aggregate employment from the detailed 3-digit industries to sector (2-digit) industries. Also, aggregation by time can create an annual employment series from monthly employment series. You have the option of creating new records or supplementing already existing data.

The Aggregate module is available in the Short and Long Term applications. The same screen displays in each application.

Screen Controls

- **Select aggregation type** down-down menu
- **Industry** radio button
- **Industry Levels** radio button
- **Select an Industry** drop-down menu
- **Select an industry Level** drop-down menu
- **Roll up to** drop-down menu
- **Overwrite** radio button
- **Add** radio button
- **Aggregate Data** button
- **View Results Data/Graph** button

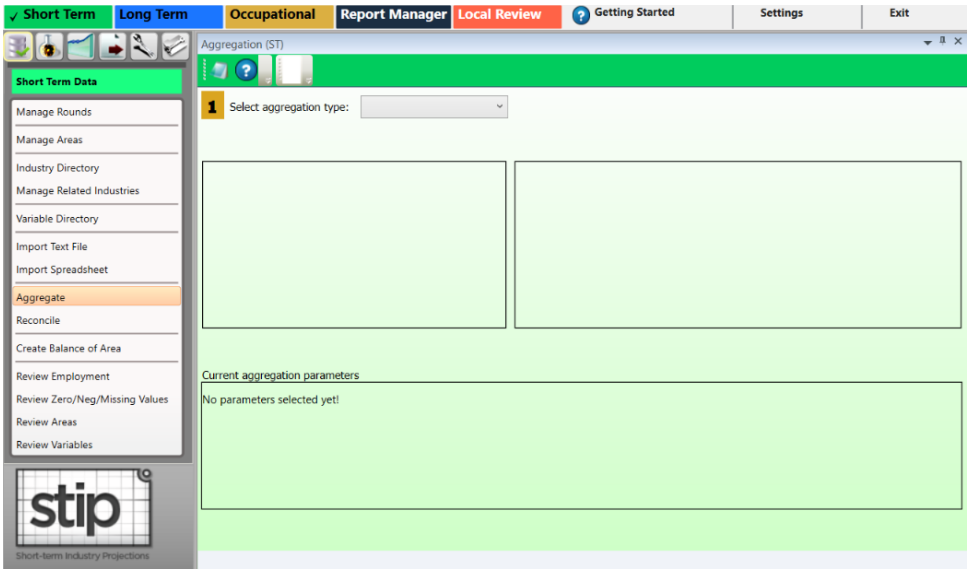


Figure 1: Aggregate module

☞The Aggregate module uses numeric step indicators to guide the process. After Step 1 (select aggregation type), the other steps will be enabled.

Aggregate by Industry

Aggregating by Industry adds employment across various industry levels or groups of industries for a particular area or group of areas.

1. Select **Aggregate by Industry** from the **Select aggregation type** drop-down menu. The step guide buttons will be unlocked.

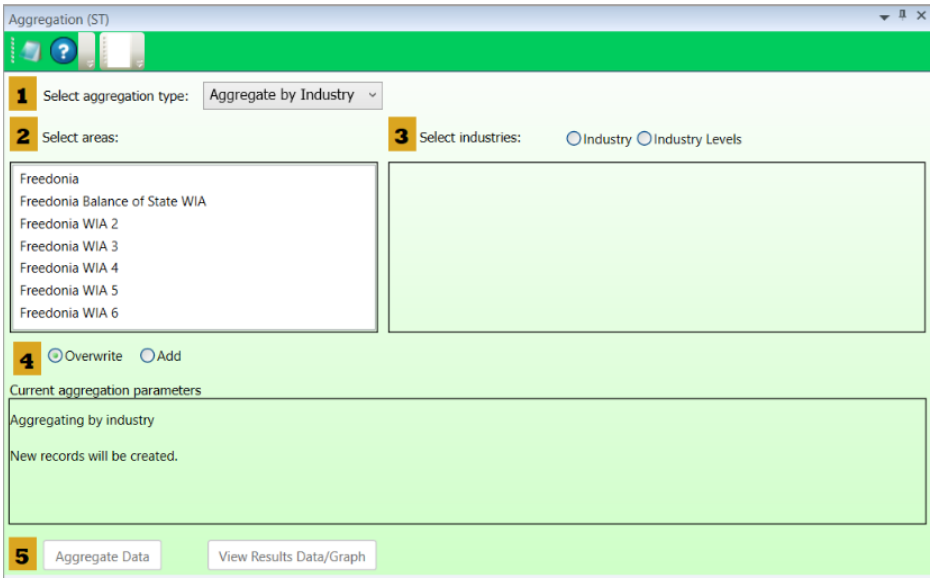


Figure 2: Aggregate by Industry selected

2. **Select areas** to aggregate from the area list box. The list shows all areas with monthly employment in the database. For assistance with selecting multiple items, click here.

3. Select the **Industry** or **Industry Levels** radio button.

- When the **Industry** radio button is selected, the **Select an industry** drop-down menu becomes available. Selecting an industry will populate the **Select industries to sum** window. Select the industries to include in the aggregation from the **Select industries to sum** window and continue to the next step.
- Selecting the **Industry Levels** radio button enables you to **Select an industry Level** from the drop-down menu and select a level to **Roll up to** from the drop-down menu. Option combinations are available to aggregate data at various industry levels. The chosen industry level will select the next highest level to **Roll up to** automatically, but higher roll-up levels can be selected as well.

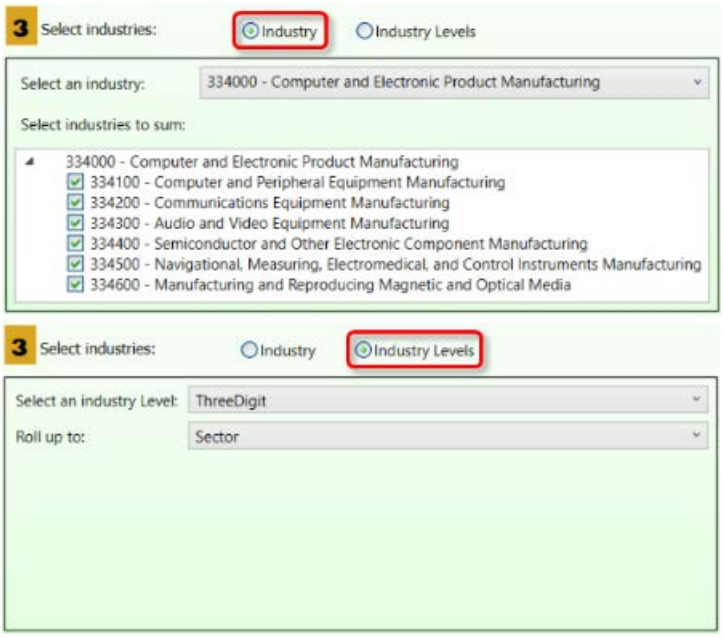


Figure 3: Select industries option groups

☞Each time selections are made, the **Current aggregation parameters** window will change to reflect the modifications.

4. Select an **Overwrite** or **Add** radio button option.

- **Overwrite** will replace an existing data point with newly summed data. It will only do this on a month-by-month basis. Months not part of the rollup process will be left unaffected.

- **Add** will add the new value to existing data, if that data is present. This is a way to supplement the aggregation process.

5. Click the **Aggregate Data** button to perform the rollup.

6. Click the **View Results Data/Graph** button. The **Aggregation Results** screen will activate to show the results of the aggregation. If other areas or industries were chosen in Step 2, they will be available from the drop-down boxes.

Figure 4: Aggregation Results

☞To view statistical values overlaid on the data, select the Graph Enhancement Controls at the bottom of the graph. Use the Display date spinner or select chart dates with the mouse to examine the data.

Aggregate by Area

Aggregate by Area sums the employment for each child member of an Area Group and creates a new employment series for the parent area for a particular industry or group of industries.

1. Click the **Select aggregation type** drop-down menu and select **Aggregate by Area**.

2. Select a group from the **Select area groups** list. More than one Area Group can be selected.

3. Select either the **Industry** or **Industry Levels** radio button option. Select specific industries from the industry list, or select an industry level.

4. Click the **Aggregate Data** button.

Aggregate by Time

Aggregation by Time will average monthly employment for a year to create annual employment for that year, for specific areas and industries.

1. Click **Aggregate by Time** from the **Select Aggregation Type** drop-down menu.

2. **Select the areas** to include in the aggregation.

3. Select the **Industry** or **Industry Levels** radio button. Select the industries to include.

4. Click the **Aggregate Data** button.

Related Content

- Industry Mix (LT)

Reconcile

Use the **Reconcile** module to compare summed employment and actual employment for industries, areas, or times. Reconcile is a tool that helps you determine the consistency of industry employment in the database. It's important, for example, that employment in sub-state areas adds to employment at the state level for each industry, and that employment adds consistently across industry levels. It's also important that annual data be reflective of monthly data for the same industry and area. The Reconcile module provides diagnostic information for all of these scenarios.

The Reconcile module is available in the Short Term and Long Term applications. The same screen displays in each application.

Screen Controls

- **Select reconciliation type** drop-down box
- **Select areas** list box
- **Select industries** option group
  - **Industry** radio button
  - **Industry Levels** radio button
- **Select an industry** drop-down box
- **Select industries to sum** check boxes
- **Select an industry level** drop-down box
- **Roll up to** drop-down box
- **Reconcile Data** button
- **Off** radio button
- **Absolute difference greater than** radio button/spinner
- **Percent difference great than** radio button/spinner
- **Date Range** spinner
- **View Results Data/Graph** button

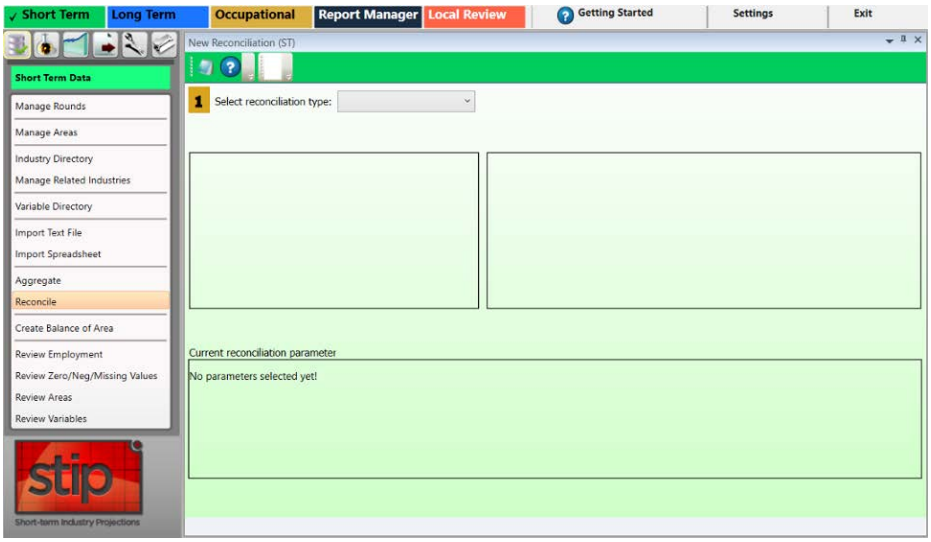


Figure 1: Reconcile module

☞The Reconcile module uses numeric step indicators to guide the process. After Step 1 (select reconciliation type), the other steps will be enabled.

Reconcile by Industry

Reconcile by Industry compares employment between various industry levels or groups of industries, for a particular area or group of areas.

1. Select **Reconcile by Industry** from the **Select reconciliation type** drop-down.
2. **Select area(s)** to be included in the reconciliation.

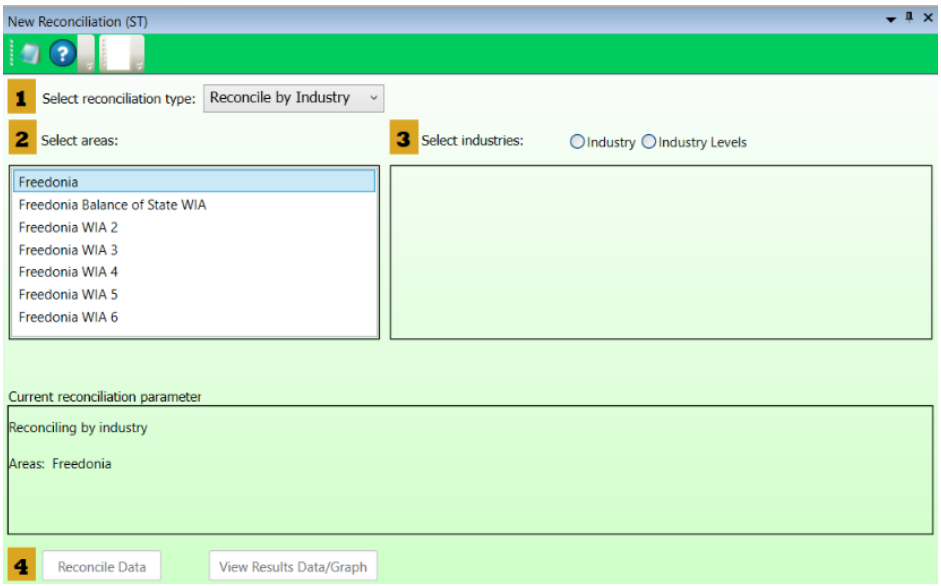


Figure 2: Select the area(s)

3. Select the **Industry** or **Industry Levels** radio button.

- If the **Industry** radio button is selected, the **Select an industry** drop-down menu becomes available. After selecting an industry, the **Select industries to sum** window will populate. Select the industries to include in the reconciliation from the **Select industries to sum** window and continue to the next step.
- Selecting the **Industry Levels** radio button will allow you to **Select an industry level** and **Roll up to** level from two drop-down menus. The selected Industry Level will choose the next highest level to **Roll up to** automatically, but higher roll-up levels can be selected from the menu.

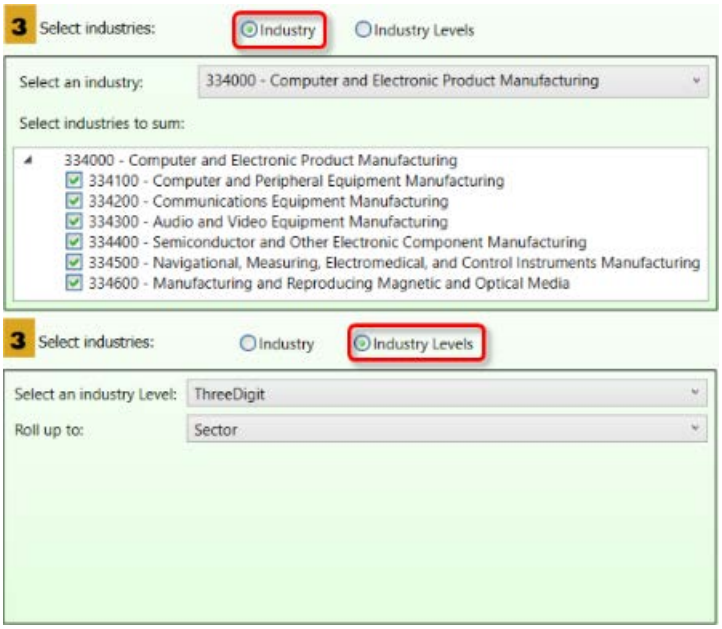


Figure 3: Select an Industry or Industry Levels

☞Each time selections are made, the **Current reconciliation parameter** window will change to reflect the modifications.

4. Click the **Reconcile Data** button.

5. Click the **View Results Data/Graph** button. The **Review reconciliation results** screen will open in a new window to show the results of the reconciliation. If other areas or industries were chosen, they will be available from the drop-down boxes.

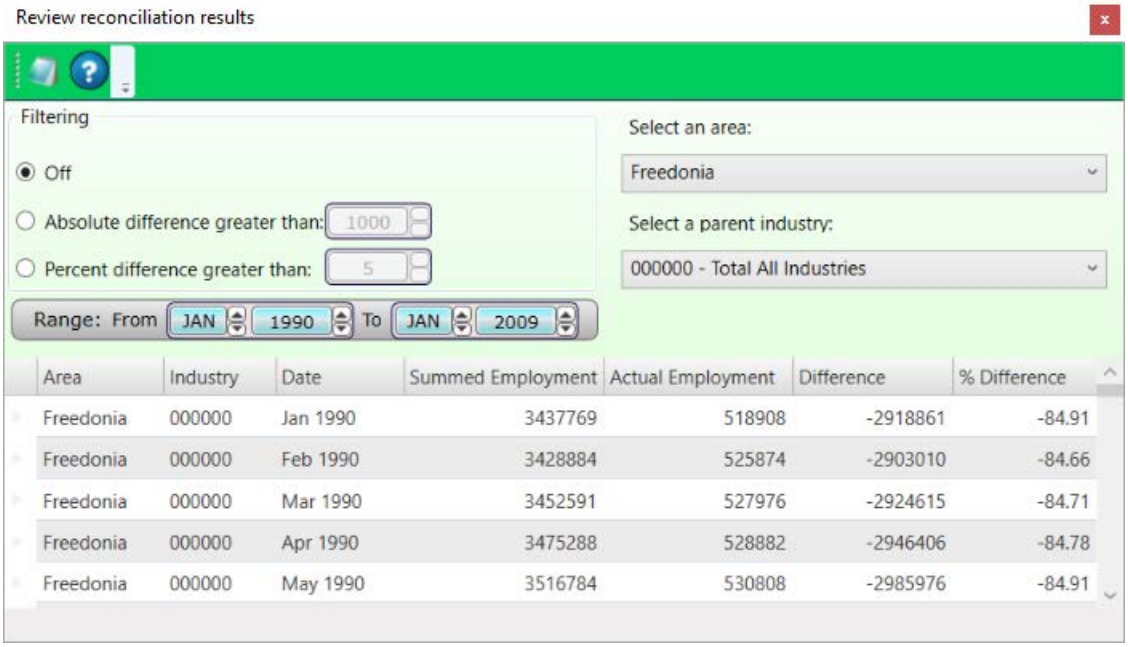


Figure 4: Review reconciliation results

☞Other options are available to filter results. The filter defaults to off. One way to filter is the **Absolute difference greater than** spinner. The default value is 1000, but you can adjust this. Another filter is a **Percent difference greater than** spinner. A **Date Range** spinner is also available to view results within a specific time frame.

Reconcile by Area

Reconcile by Area compares employment in the members of an Area Group to the employment in the parent area for a particular industry or industries.

1. Select **Reconcile by Area** from the **Select reconciliation type** drop-down.
2. **Select area groups** to be included in the reconciliation.
3. Click a **Select Industries** radio button.
4. Click the **Reconcile Data** button.
5. Click the **View Results Data/Graph** button. The **Review reconciliation results** screen will display the results of the reconciliation.

Reconcile by Time

Reconcile by Time compares the average monthly employment for a year to the annual employment for that year, for specific areas and industries.

1. Select **Reconcile by Time** from the **Select reconciliation type** drop-down.

2. **Select area(s)** to be included in the reconciliation.
3. Click a **Select industries** radio button and make your selections.
4. Click the **Reconcile Data** Button. The **Review reconciliation results** screen will activate to show the results of the reconciliation.

Related Content

- Industry Mix (LT)

Create Balance of Area

Create Balance of Area creates a new area consisting of all employment in a parent area that does not belong to the child members of the area group. For example, if a state is projecting employment in metropolitan statistical areas (MSAs), a state's balance of area would contain the remainder of the employment in the state that lies outside the MSAs. A Balance of Area is also known as a Balance of State (BOS).

The Create Balance of Area module is available in the Short Term and Long Term applications. The same screen displays in each application.

Screen Controls

- **Select an Area Group** down-down menu
- **Provide a Name** input field
- **Area Code** input field
- **Process** button

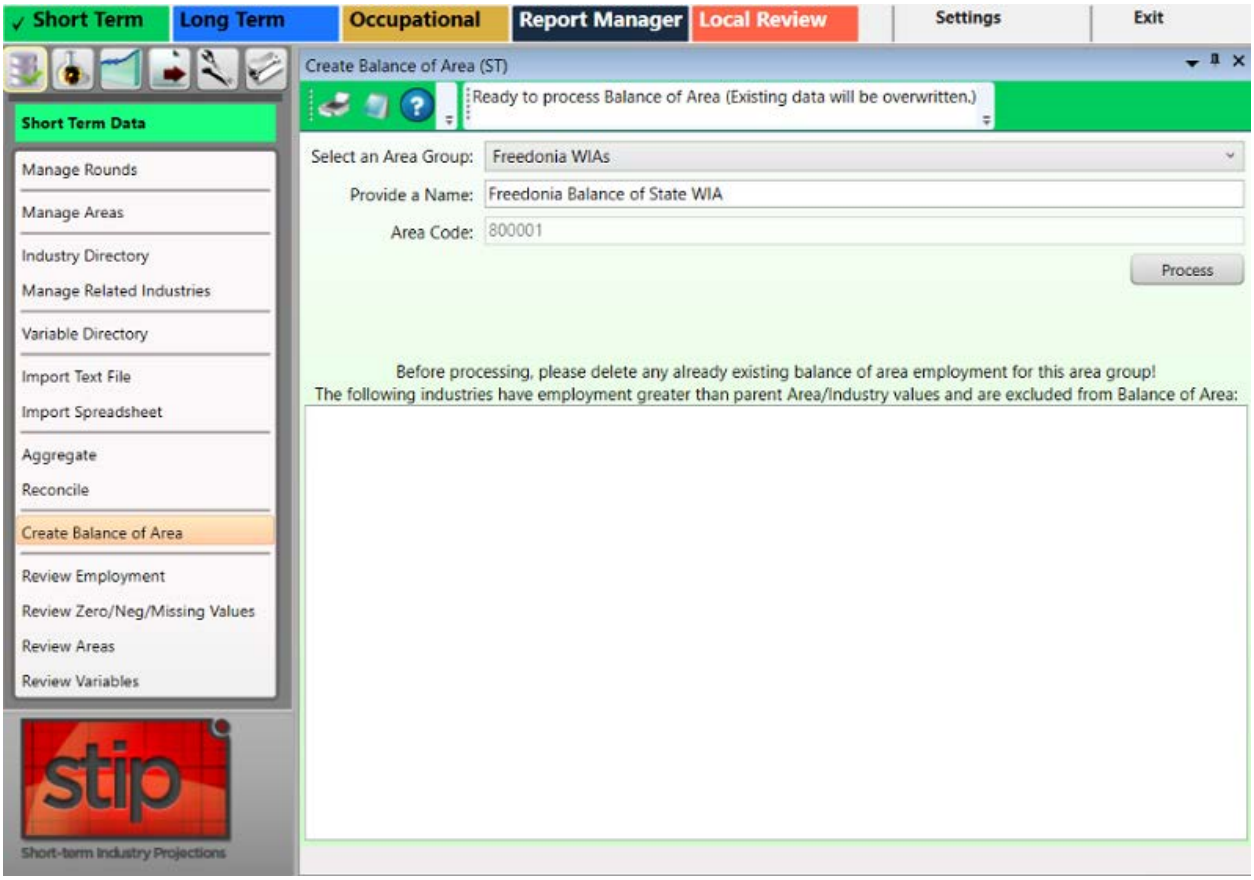


Figure 1: Create Balance of Area module, docked

Create a Balance of Area

1. Click the **Create Balance of Area** menu option. The **Create Balance of Area** screen will open in an undocked window.
2. **Select an Area Group** from the drop-down menu.
3. Type a name for the new area in the **Provide a Name** input field.
4. Type a valid **Area Code** into the input field. The area code must be 6 digits in length. The **Process** button will be enabled.

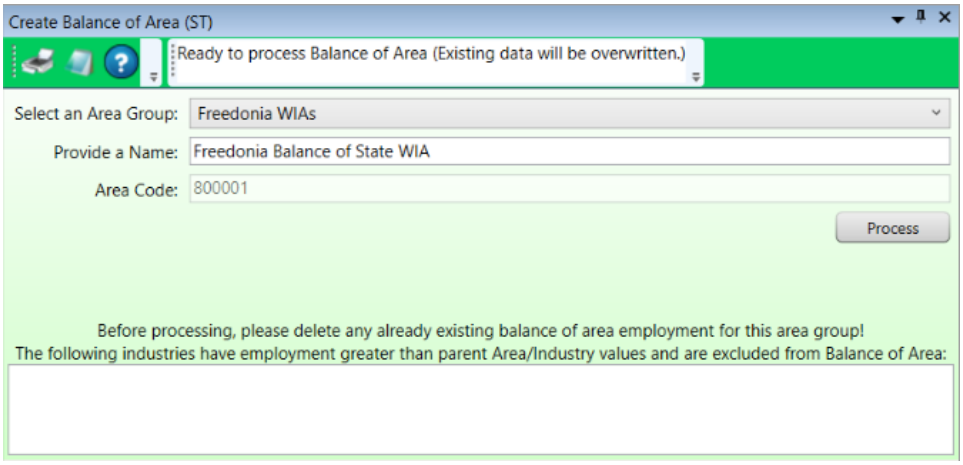


Figure 2: Preliminary information entered, Process button unlocked

5. Click the **Process** button. For each industry at the parent area level (for example, the state level), the software sums all of the employment in the industry in each of the sub-state areas that already exist in the group. It then subtracts that sum from the state employment and creates a new industry record. The record is the difference between the state employment and the sum of the non-balance of area sub-state employment. This new employment value is assigned to the Balance of Area. The system will do this for each year when accessed through Long Term Industry Projections and for each month when accessed through Short Term Industry Projections.

When processing is finished, the BOS Processed dialog box will be displayed.

Figure 3: Number of records processed

6. Click **Yes** to save the Balance of Area records to the database. Click **No** to cancel the save.

After the values have been saved, any industries with sums greater that the group total (which have been excluded from the saved values) are noted in the bottom section of the **Create Balance of Area** screen.

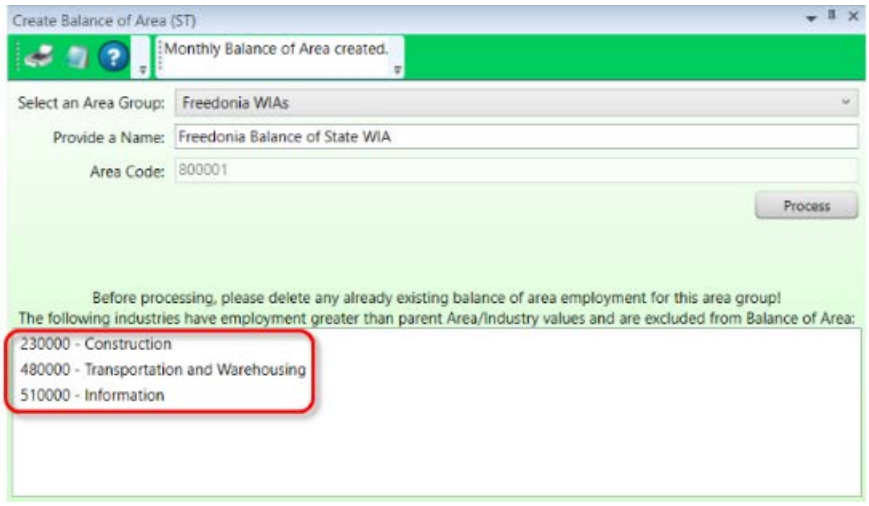


Figure 4: All records saved; highlighted industries were not

You can view the new industry employment data in the Long Term Edit Employment Time Series module.

Related Content

- Manage Areas

Review Employment

Use the **Review Employment** module to perform a quality check on the historical data series for industries in a specified area. With the quality check, you are able to identify potential problems in the data series.

Prerequisites that must be completed prior to using this module are:

- Run the area set up using the Manage Areas module.
- Import the Monthly Employment Data using the Import Text File or Import Spreadsheet modules.

Screen Controls

- **Select an Area** drop-down menu
- **Show / print flagged records only** check box
- **Process** button
- **Employment Table** tab
- **Missing Industries (Substate)** tab

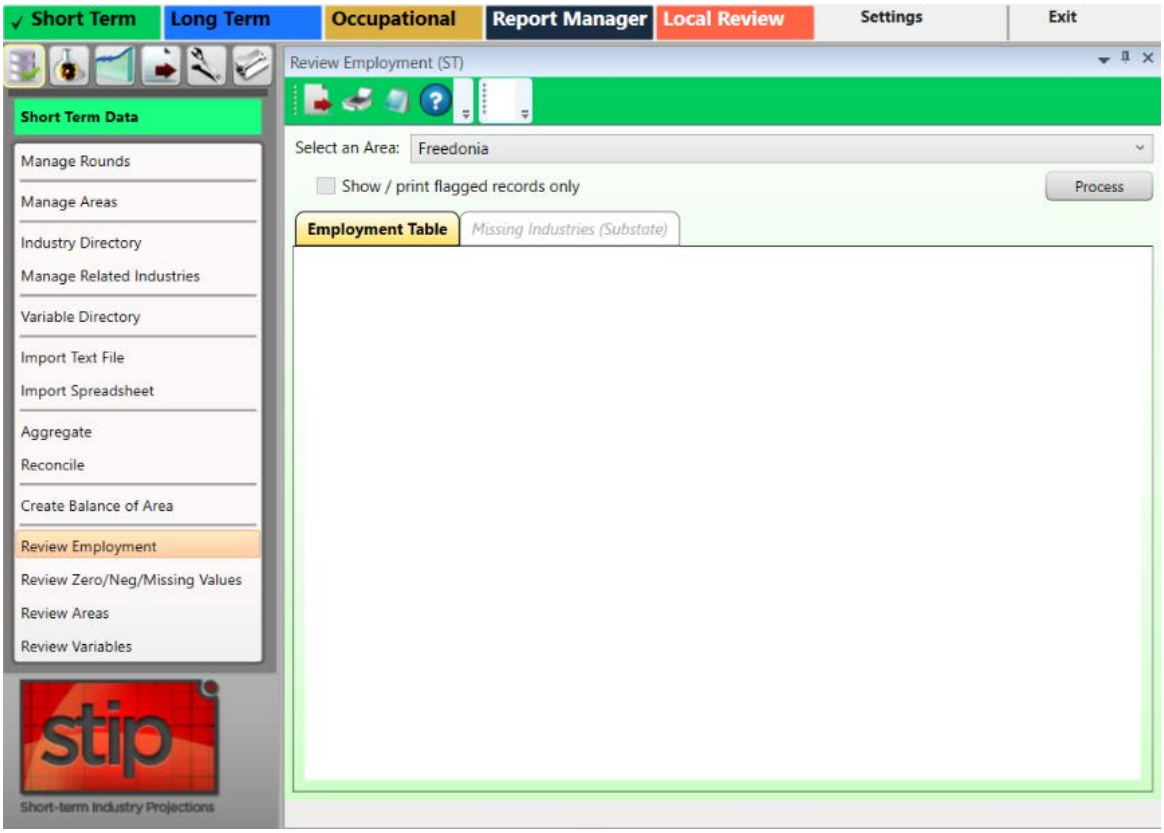


Figure 1: Review Employment module

Review Historical Employment Data

1. **Select an Area**.

2. Click **Process**. A list of industries will display on the **Employment Table** tab with the start date and end date for each industry, as well as the number of observations. If an industry contains a start date or an ending date that is different from the majority of the industries and different than the round ending date, they will be flagged.

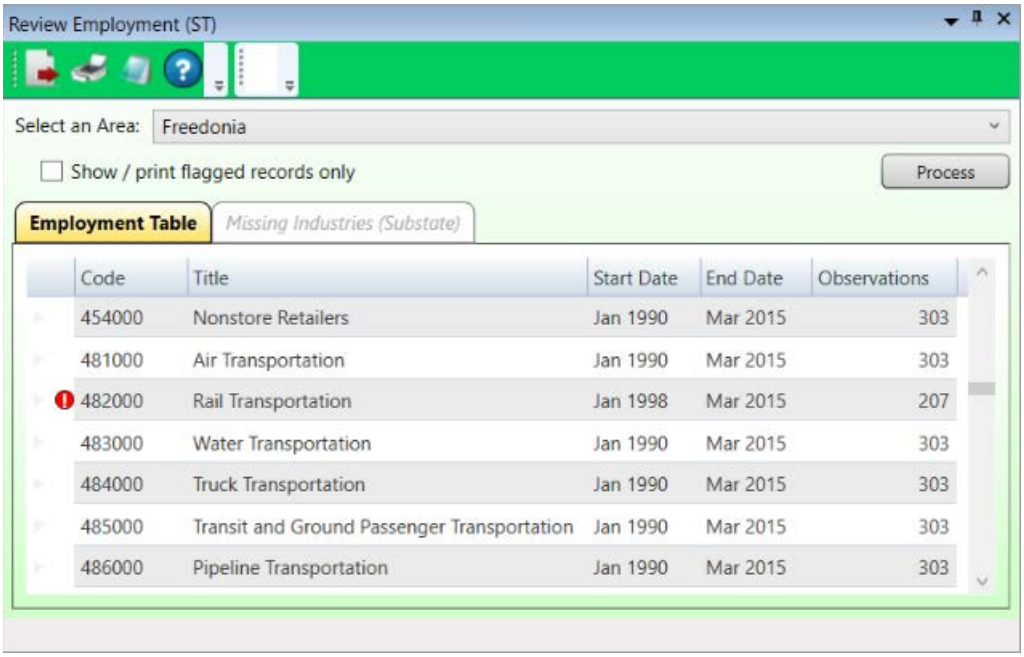


Figure 2: Employment Table tab

The flag ❗ displays if there is information missing between the start and end dates. The flagged records should be reviewed for accuracy. One tool to help locate missing dates is by using the Review Zero/Neg/Missing Values module. Running this module can help identify each industry that may be missing employment and print a report. If there is missing employment information, use the Preview Employment module under the Analysis category to view or modify employment data.

Once you have corrected any issues, click **Process** to reprocess the data. It is okay to have industry ending data extend beyond the ending date of the round, but be aware that numerous flags may appear in the list of industries on the employment tab. Flags are used as a warning to identify potential problems, but do not necessarily need to be removed to continue.

3. Check the **Show / print flagged records only** box to view only records with flags.

☞Click a table heading to sort data by that heading. For example, to sort by Title, click the Title heading.

Missing Industries (Substate) Tab

If the selected area is a sub-state area, the **Missing Industries (Substate)** tab is enabled after clicking the Process button. At the top, the tab displays a list of industries that were found in the state area but not found in the sub-state area.

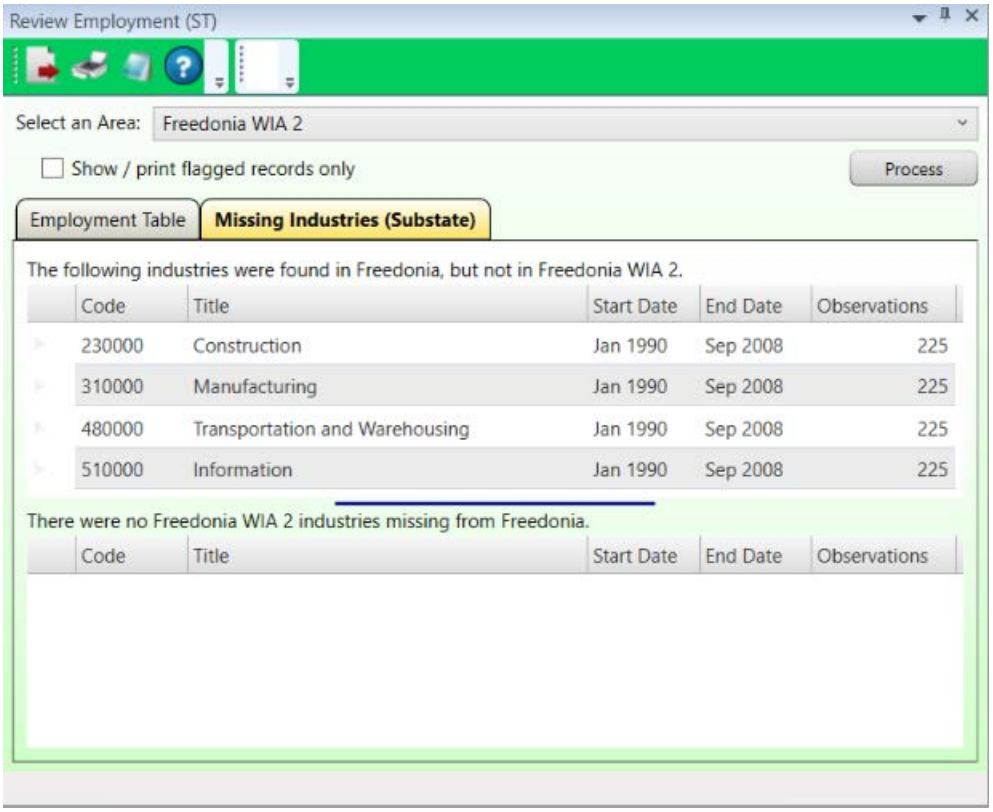


Figure 3: Missing Industries (Substate) tab

At the bottom, industries found at the sub-state level but not statewide are displayed. Before you run the Project Multiple Regions module, you must have all the same industries in the state and sub-state areas.

Review Zero/Neg/Missing Values

The **Review Zero/Negative/Missing Values** module allows the viewing of industries, in the selected area, which have employment levels that are zero, negative, or are missing values. This identifies errors in an employment data series.

Prerequisites that must be completed prior to using this module are:

- Run the area set up using the Manage Areas module.
- Import the Monthly Employment Data using the Import Text File or Import Spreadsheet modules.

Screen Controls

- **Select an area** drop-down menu
- **Beginning Date** spinner
- **Show only exceptions from base period** check box
- **Process** button

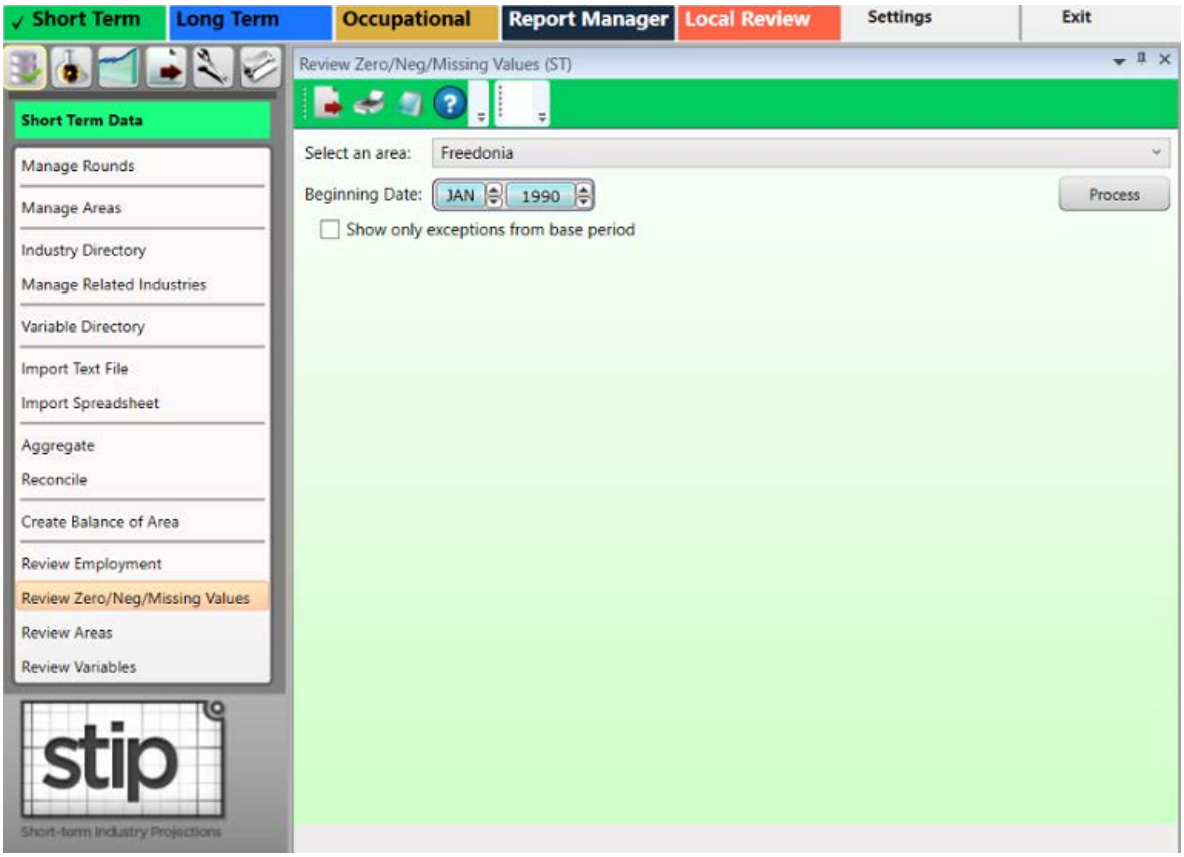


Figure 1: Review Zero/Neg/Missing Values module

Review Zero/Negative/Missing Values

1. **Select an Area** from the drop-down menu.
2. Click the **Beginning Month/Year** spinner to set the **Beginning Month and Year**.
3. Click the **Show only exceptions from base period** check box to use the base period only.
4. Click the **Process** button. Industries with zero, negative, or missing values for the selected area and date are displayed.

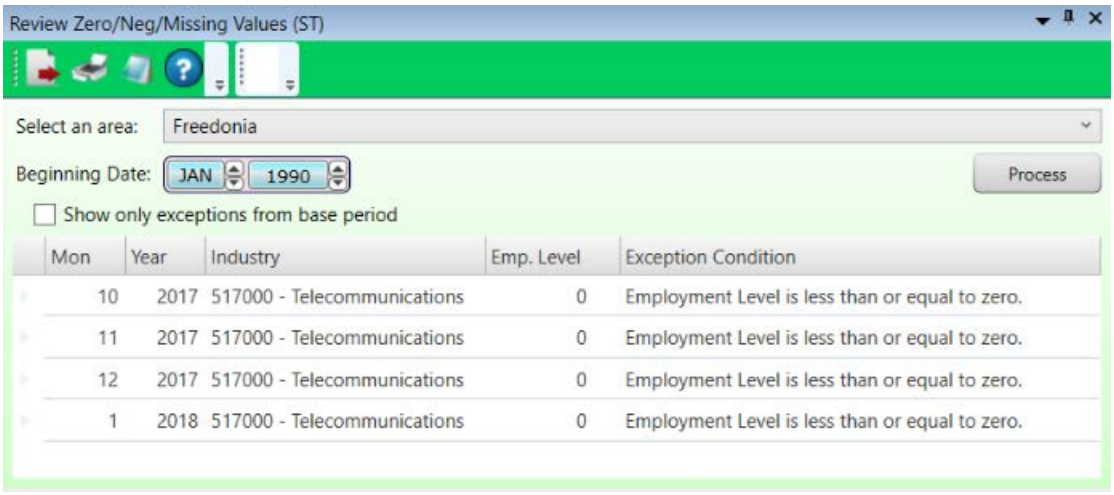


Figure 2: Flagged records display with the reasons they are flagged

Take note of the Month, Year, and Industry columns with error flags and visit the Preview Employment module under the Short Term Analysis group menu to view and modify employment data. Once you have corrected any issues, return to this module and click **Process** to reprocess the data and verify there are no exceptions or that there is no concern for the exception.

Review Areas

The **Review Areas** module compares Area Group information to identify potential problems found in the employment data series.

Prerequisites that must be completed prior to using this module are:

- Run the area setup and set up an Area Group using the Manage Areas module. Creating Area Groups allows for the comparison of information between a parent and child areas. This will help to determine if there are data problems.
- Import the Monthly Employment Data using the Import Text File or Import Spreadsheet screens.

The Review Areas module is available in the Short Term and Long Term applications. The same screen displays in each application.

Screen Controls

- **Select an Area Group** drop-down menu
- **Process** button
- **Show / print flagged records only** check box

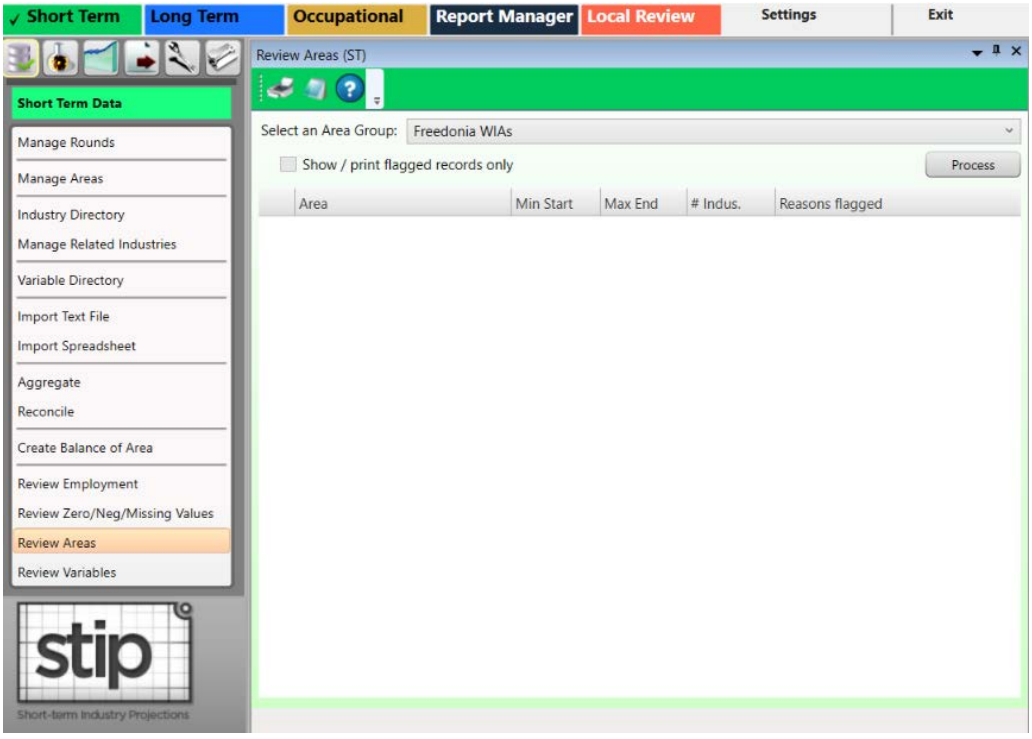


Figure 1: Review Areas module

Review Areas

1. **Select an Area Group**.
2. Click the **Process** button. When processing is complete, the results display.

Figure 2: Discrepancies are listed in the Reasons Flagged column

Review starting dates, ending dates, and number of observations to make certain they are what is expected. A flag indicates there are issues with the record. In Figure 2, Freedonia WIA 3 contains more observations than the other areas. This information can help identify possible discrepancies.

Modify data as needed either using the Preview Employment module or by re-importing a corrected spreadsheet. When the number of industries is different in child areas than the parent area, the Review Employment (ST and LT) module can then be used to determine specifics of the discrepancies. Industries can be identified that are found in the parent area but not in a child area, and vice versa.

Once you have corrected any issues, return to this module and click **Process** to reprocess the data and verify there are no exceptions or that there is no concern for the exception.

Review Variables

Use the **Review Variables** module to review the National, State, and Regional variables for any inconsistencies in the data series.

Prerequisites that must be completed prior to using this module are:

- Run the area setup using the Manage Areas module.
- Import the Monthly Variable data using the Import Spreadsheet module.

Screen Controls

- **Select Variable Type** drop-down menu
- **Show / print flagged records only** check box
- **Process** button

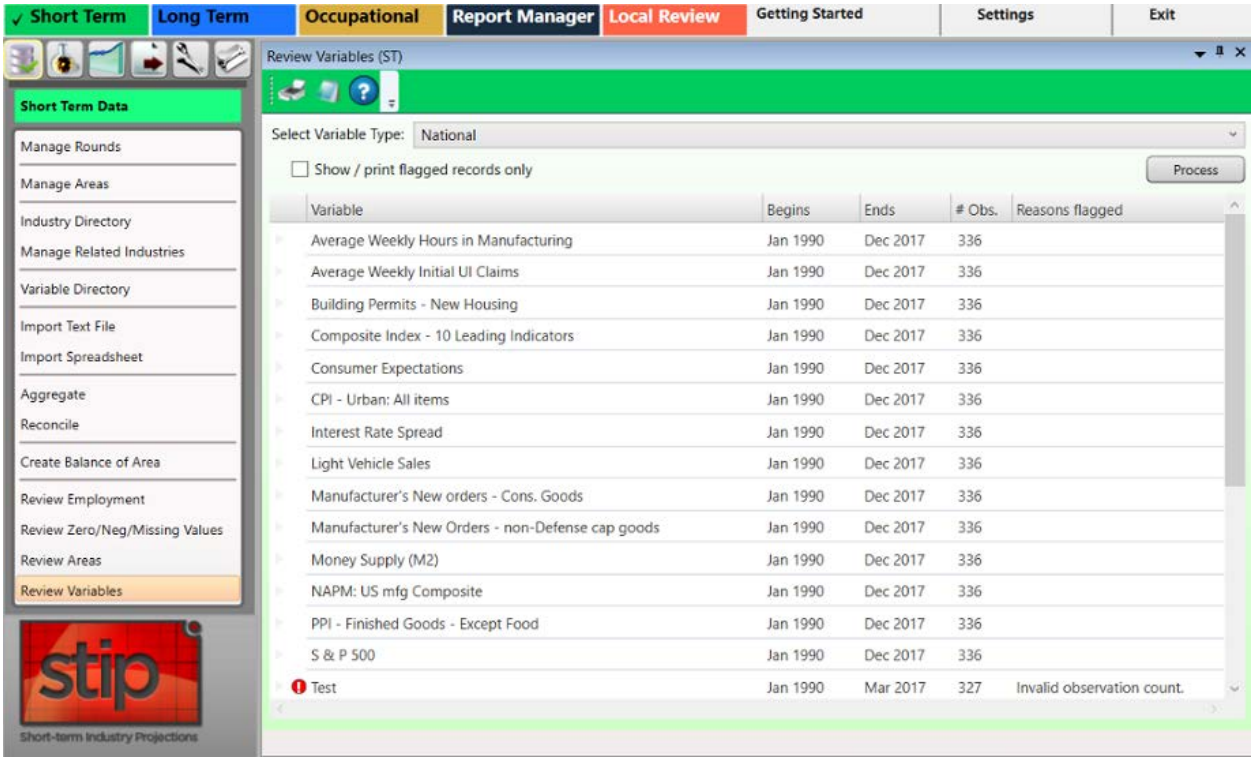


Figure 1: Review Variables module

Review Variables for Inconsistencies

1. **Select Variable Type** from the drop-down menu.

2. Click the **Process** button. The variables of the selected type will be displayed. Variables with errors will be flagged  and their discrepancies listed in the **Reasons flagged** column.

☞Click the **Show / print flagged records only** check box to hide all records that do not have discrepancies.

Review any flagged records to ensure the information is correct. Use the Preview Variables module under the Analysis category to modify or add a variable record, or re-import variable data. Once you have corrected any issues, return to this module and click **Process** to reprocess the data and verify there are no exceptions or that there is no concern for the exception.

Related Content

- Variable Directory
- Preview Variables (ST)
- Dummy Variables (ST)

Short Term Analysis Menu Items

Short Term Analysis Introduction

The menu items for the **Short Term Analysis** group menu include tools to review data series or to create/edit dummy variables in preparation for processing projections. The employment series imported into the Short Term application should be an unadjusted (not seasonally adjusted) data series.

Figure 1: Short Term Analysis group menu

The Short Term Analysis group menu contains the following selections:

- Preview Employment
- Outliers
  - Time Series Plot Tab
  - Transformed Time Series Plot Tab
- Preview Variables
- Dummy Variables

Preview Employment

Use the **Preview Employment** module to analyze and edit the Monthly Industry Employment data series.

The graph displays all of the monthly employment data values so you can visually see trends for the employment series and any irregularities that might be occurring. Using this module, you are able to view the historical graph of an industry's employment series and review the related industries assigned to the selected industry.

Screen Controls

- **Select an Area** drop-down
- **Select an Industry** drop-down
  - **View % Shares** check box
- **View Related Industries** button
- **Delete Data Series** button
- **Level** radio button
- **% Growth** radio button
- **Display date** spinner
  - **Max** button
- **Graph Enhancement** controls

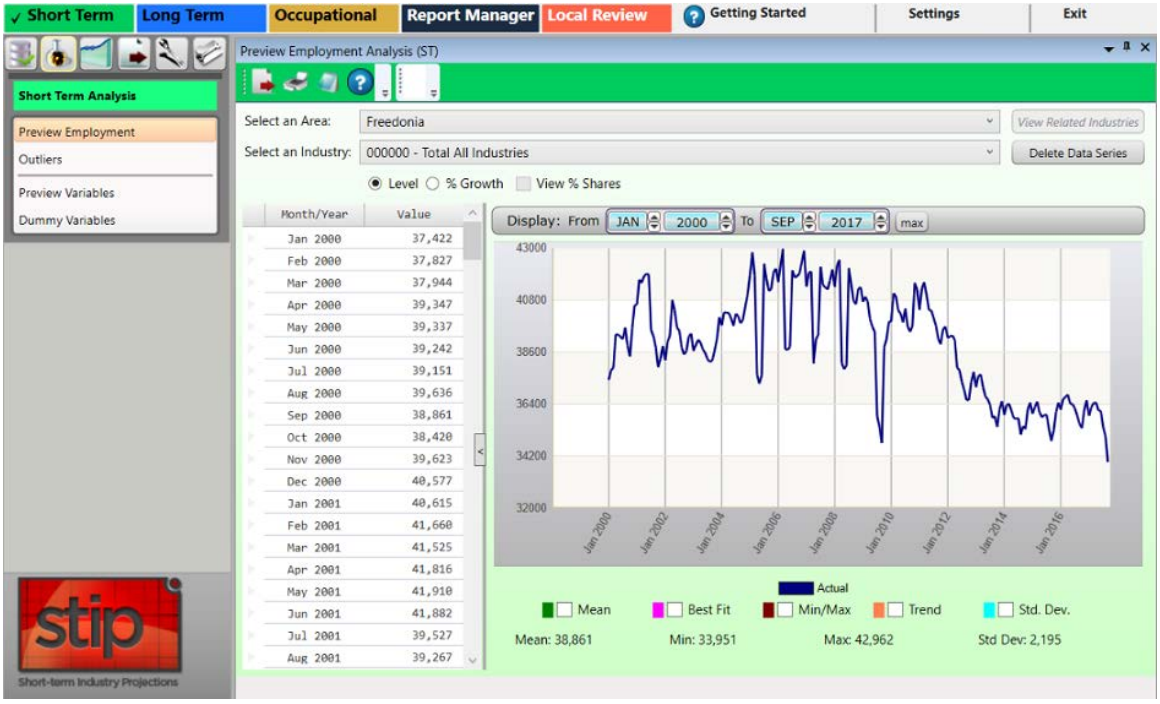


Figure 1: Preview Employment Module

View Monthly Industry Employment Data

1. **Select an Area** from the drop-down menu.
2. **Select an Industry**.
3. Click either the **Level** or **% Growth** radio button.

- The **Level** radio button displays the actual employment data charted.
- The **% Growth** radio button displays the percent of change of the data charted. The growth calculation represents the compounded annual growth rate for the two-year projection period. A Growth Rate document is available on the Projections Central website in the Short Term Resources section.
- The **View % Shares** check box displays (as a separate line on the graph) the percent of a sub-state area industry employment, compared to the state total for the industry. To activate the **View % Shares** check box, select a sub-state area from the **Select an Area** drop-down menu.

4. Change the display months and years by adjusting the Display date spinner, or by selecting a point on the graph. The graph will be updated automatically as changes are entered using these controls. Graph Enhancement Controls can also be used to overlay statistical measures on the graph.

The **data grid** displays the date (**Month/Year**) and employment level (**Value**) for the selected area and industry historical series. When scrolling through the data grid, a date pop-up will appear (see Figure 2). As you move the scroll bar, the pop-up will display the month/year in chronological order. When the desired date is located in the series, release the mouse button and the selected date will appear at the top of the grid.

Figure 2: Date pop-up

☞Alternatively, click on a value in the Data Grid and move up and down through the series with the keyboard arrow buttons.

Edit the Data Grid

1. Highlight the row you want to adjust.
2. **Right click** and select **Add**, **Edit**, or **Delete** from the context menu.

- To **add new information**, select **Add**. A new record will appear at the top of the grid. Double-click in the blank **Month/Year** field and enter the date.

☞You can enter the date as Oct 2008, October 2008, or 10 2008. All of these examples will format to Oct 2008.

- Press **Tab** to or double-click the **Value** field to enter a value. Press **Enter** to add the record and the value will be sorted into the proper order within the grid. **Right click** and select **Cancel Add** to delete the new row without adding it to the data series.
- To edit a value, **right click** it and select **Edit**. Type the new value and press **Enter** to save it.
- To **delete an observation** from the series, **right click** it and choose **Delete**. When prompted, click **Yes** to delete the record.

☞Multiple observations can be deleted simultaneously. For instructions on making multiple selections, click here.

Additional Preview Employment Options

- Click the **Review Related Industries** button, to display a list of industries related to the selected industry in a new window.
- Click the **Delete Data Series** button to remove employment data for the selected area/industry combination.

Export/Print the Area/Industry Combination

- Click the **Export** button on the Active Module Toolbar to create a spreadsheet from the area/industry selection.
- Click the **Print** button to print a report.

Related Content

- Review Zero/Neg/Missing Values

Outliers

Outliers are data that deviate from normal seasonal fluctuations. An outlier is a point in a time series that has a value different enough from the points immediately surrounding it to raise questions about that point's validity.

Outliers may occur for several reasons:

- Errors in the data.
- Very small data values causing relative fluctuations.
- Economic upturns or downturns reflected in employment values rising or falling suddenly.

It is the analyst's responsibility to decide the cause of a particular outlier's presence in an employment series. The software cannot make that decision. However, the Outlier module provides the tools to search for possible outliers and to suggest possible alternative values.

The Outlier module is duplicated in the Short and Long Term applications. The only difference is Short Term displays monthly data in addition to yearly data. The Long Term Outliers module will calculate yearly data only.

Screen Controls

- **Settings** tab
  - **Select Areas** drop-down
  - **Analyze All Areas** check box
  - **Three times the interquartile range or greater** radio button
  - **Two standard deviations from the differenced mean or greater** radio button
  - **Absolute magnitude difference of 1200 or greater** radio button
  - **Top 100 by absolute differenced from the differenced median** radio button
- **Time Series Plot** tab
  - See the Time Series Plot Tab section
- **Transformed Time Series Plot** tab
  - See the Transformed Time Series Plot Tab section
- **Seasonality Plot** tab (Short Term only)
  - See the Seasonality Plot Tab section
- **What's an outlier** button
- **Change Default Outlier Magnitude** button
- **Change Default Outlier Count** button

- **Find Outliers** button

Figure 1: Outliers module

Prepare Outlier Processing

1. Select an area from the **Select Areas** drop-down menu, or check **Analyze All Areas** box.
2. Select a **Show Outliers** radio button.

☞To display the Outlier Detection Methodologies explanation, click the **What's an outlier** button.

Outliers to show include:

- **Three times the interquartile range or greater**.
  - This option calculates quartiles for the differenced series at the 25th, 50th, and 75th percentile. The difference between the 75th and 25th percentile is called the interquartile range. The system flags any industries with points on the differenced series that are more than three times the interquartile range, above the 75th percentile or below the 25th percentile.
- **Two standard deviations from the differenced mean or greater**.
  - This calculates the standard deviation from the mean of the differenced series, then flags any industries with points on the differenced series that are more than two standard deviations above or below the mean.

- **Absolute magnitude difference of 1200 or greater**.
  - This flags any industries with points on the differenced series that have an absolute value above a specific setting. The default magnitude to compare against is 1,200.

☞Click the **Change Default Outlier Magnitude** button to set a different absolute magnitude difference.

- **Top 100 by absolute difference from the differenced mean**.
  - This ranks all differenced points for all industries by the absolute value of their differences from the median of the differenced series, then flags any industries that have points in the top portion of the list. By default, the top 100 points measured by absolute difference are selected.

☞Click the **Change Default Outlier Count** button to set a different number of points to return.

3. Click the **Find Outliers** button. When the outlier calculations are complete, the view will be switched to the **Time Series Plot** tab to display the results.

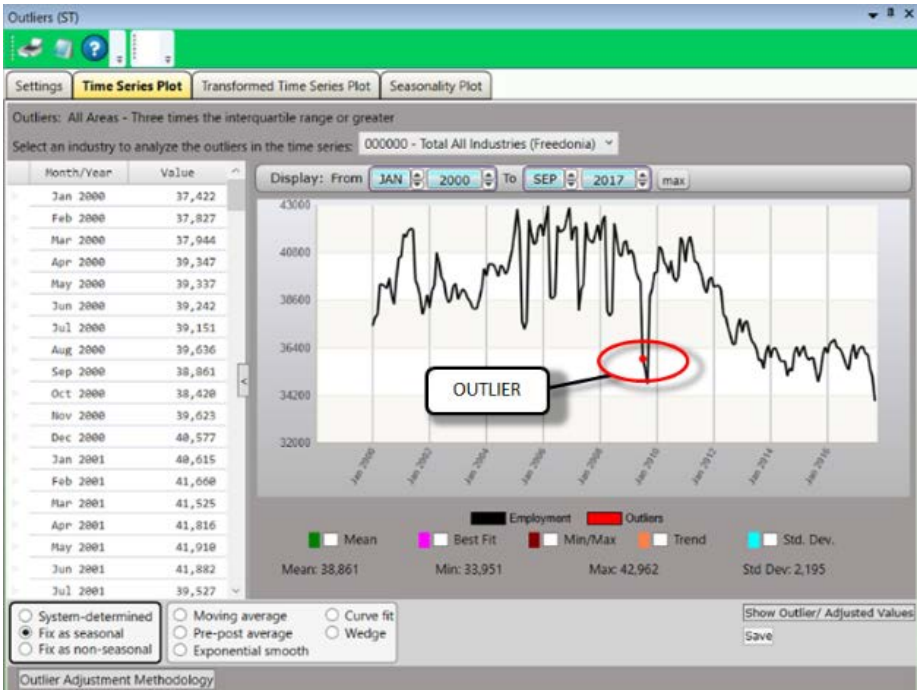


Figure 2: The Time Series Plot tab displays

Red dots indicate the calculated locations of outliers. If there are no outliers within the chosen criteria, the Time Series Plot tab will not display.

The **Transformed Time Series Plot** tab will also be unlocked after clicking the **Find Outliers** button:

Related Content

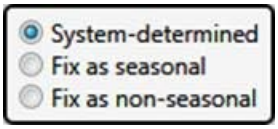
- Time Series Plot Tab
- Transformed Time Series Plot Tab
- Seasonality Plot Tab (Short Term only)

Time Series Plot Tab

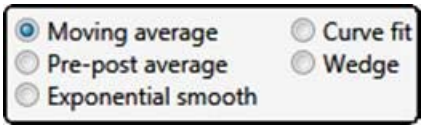
The Time Series Plot tab displays the outlier information you initially selected in the Outlier module. At the top of the screen, the area and type of outlier is displayed.

Screen Controls

- **Select an industry** drop-down menu
- **Display date** spinner
  - **Max** button
- **Graph Enhancement Controls**



- **System-determined** radio button
- **Fix as seasonal** radio button (selecting this option will unlock the **Seasonality Plot** tab)
- **Fix as non-seasonal** radio button



- **Adjustment Options**
  - **Moving average** radio button - This option takes the average of the preceding three months (default) as the new value for an outlier point. It will display a **green dot** on the graph as the suggested value.
    - **Select number of months (or years in Long Term)** drop-down
  - **Pre-post average** radio button - This option averages the values of the points immediately before and after the outlier points.
  - **Exponential smooth** radio button - This option displays the R-Squared value of the smoothing equation, which can help determine the validity of the adjusted values.
  - **Curve fit** radio button - This option displays the R-Squared value for use in fitting a first-degree linear equation to the time series or a second-degree polynomial equation.
    - **Select degree of equation** drop-down
  - **Wedge** radio button - This option requires two outlier points for calculation. The system draws a straight line between the point immediately before the first outlier and immediately after the last outlier. This causes the interpolation of the outlier points as well as the intermediate values.
    - **Start point (anchor)** date spinner
    - **End point (value)** date spinner

- **Show Outlier/ Adjusted Values** button
- **Outlier Adjustment Methodology** button - opens a document which explains the moving average, pre-post average, exponential smooth, curve fit, and wedge methodologies/adjustments in more detail.
- **Save** button - This button replaces the outlier values with new values, based on the methodology chosen.

Configure Outlier Data on the Time Series Plot Tab

1. Select an industry from the **Select an industry to analyze the outliers in the time series** drop-down menu.
2. Check one or more of the Graph Enhancement Controls, if desired.

Figure 1: Time Series Plot tab with the Trend Graph Enhancement Control

3. Set the time frame using the **Display date** spinner. Months and years are available in Short Term.
   - Click the Max button to automatically set the longest time frame possible. It is also possible to select chart dates with the mouse to examine them in greater detail.

4. When choosing either the **Fix As Seasonal** or **Fix As Non-Seasonal** radio buttons, a dialog box will be displayed asking if the outlier points for this industry should be recalculated or not. Select the appropriate response.

5. Select an **Adjustment Option** radio button (if desired).

6. Click the **Show Outlier/Adjusted Values** button to view detailed information about the chosen industry. The outlier values will be opened in a new window:

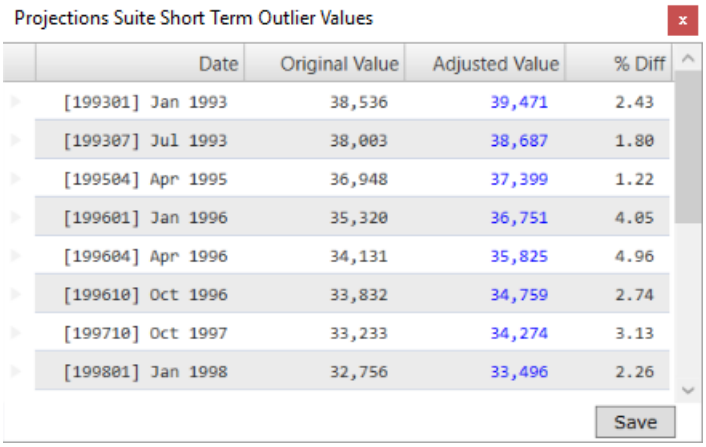


Figure 2: Outlier/Adjusted Values with Moving Average selected

7. Click the **Save** button.

☞Click the **Outlier Adjustment Methodology** button to view how the adjustments were calculated. The **Outlier Adjustment Methodologies** document will open in a new window.

Edit the Data Grid

The data grid displays the data series dates and Values in a column to the left of the graph. To edit the data grid:

1. Highlight the row you want to adjust.
2. **Right click** and select **Add**, **Edit**, or **Delete** to adjust the values in the graph.

Related Content

- Outliers
- Transformed Time Series Plot Tab
- Seasonality Plot Tab (Short Term only)

Transformed Time Series Plot Tab

The **Transformed Time Series Plot** displays the outlier information you selected in the Outlier module. It graphs the differenced series and shows where differenced points lie outside the outlier definition. The Transformed Time Series Plot tab displays two red lines indicating the value based on the Show Outlier definition chosen on the Settings tab. Any points where two values rise well above or below the red line are marked as outlier points on the Time Series Plot tab.

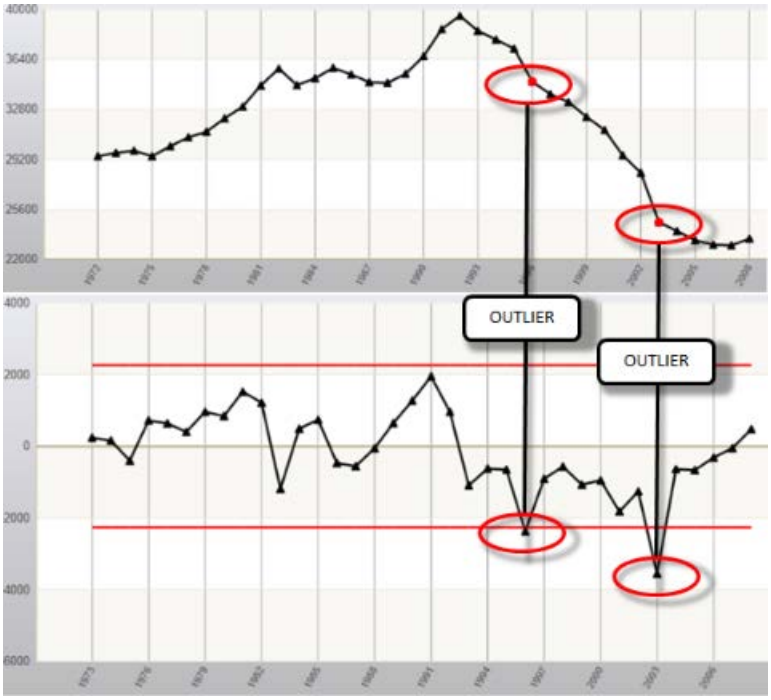


Figure 1: Time Series Plot (top) and Transformed Time Series Plot (bottom) outlier correlations

At the top of the page, the area and type of outlier is displayed. The date and Value display in the data grid on the left. The graph displays the industry data.

Figure 2: Transformed Time Series Plot tab

1. Set the time frame using the **Display** date spinners.

- Click the **max** button to automatically set the longest time frame possible.

☞Outliers are highlighted in red in the data grid on the left.

Related Content

- Outliers
- Time Series Plot Tab
- Seasonality Plot Tab (Short Term only)

Seasonality Plot Tab

The **Seasonality Plot** is available only for series that are determined by the software to be seasonal, or where month-to-month employment shows a strong tendency to be affected by seasonal characteristic employment patterns. The Seasonality Plot tab groups all the monthly employment together for the selected industry. The first black line shows January's employment, the next line shows February's employment, and so forth. The red lines show the mean of the monthly employment. Seasonal industries are differenced from year-to-year instead of month-to-month, to remove the effects of the seasonal change. The graphed time series plot in the Seasonality Plot tab shows the obvious seasonal effects.

The Seasonality Plot Tab is not available in Long Term Projections.

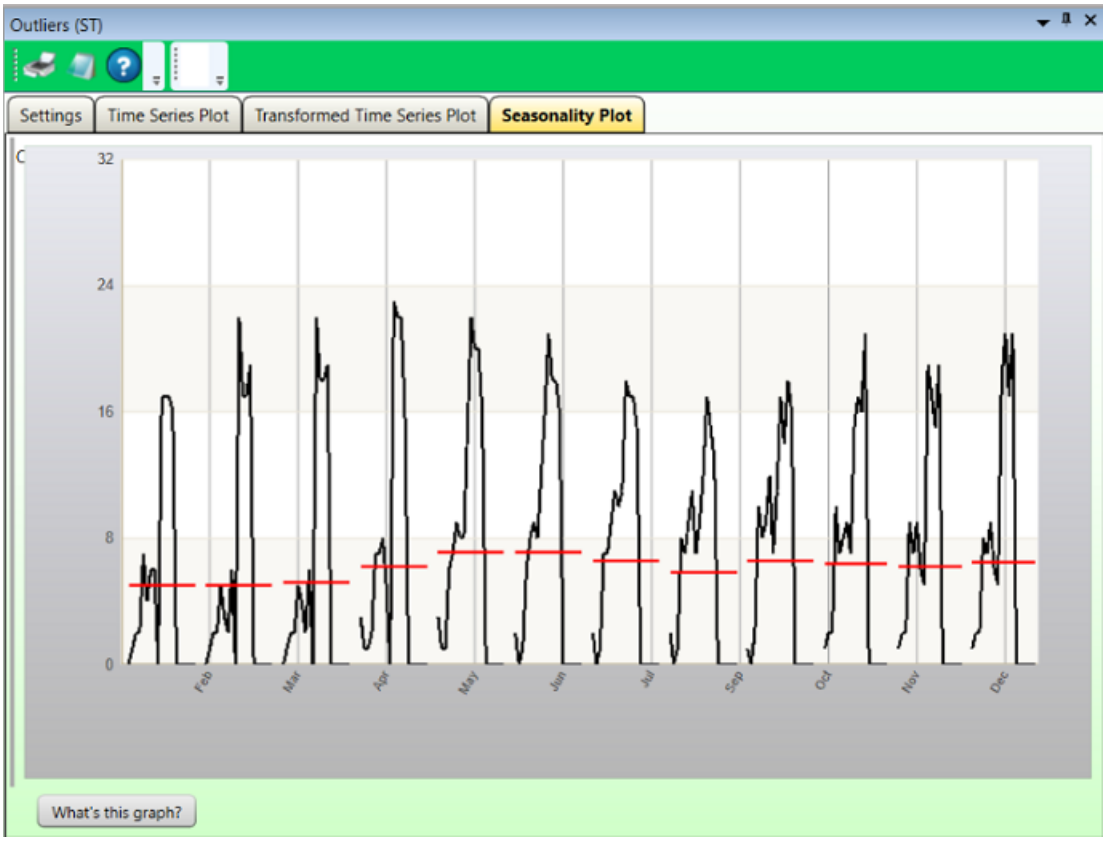


Figure 1: Monthly data for Scenic and Sightseeing Transportation

Click the **What's This Graph** button to view a detailed explanation of how data is calculated and displayed on the Seasonality Plot. The **Seasonality Graph** document will open in a new window.

Related Content

- Outliers
- Time Series Plot Tab
- Transformed Time Series Plot Tab

Preview Variables

The purpose of the **Preview Variables** module is to view, edit, and graph the national, state, and regional variable historical series data defined by and imported into the system. The variable time series displays in a grid of data and in graph form for the selected variable. Whenever a variable is changed on the screen, the system updates the data and accompanying graph.

Screen Controls

- **Select a Monthly Variable Type** drop-down menu
- **Select a Monthly Variable** drop-down menu
- **Delete Data Series** button
- **Level** radio button
- **% Growth** radio button
- **Display date** spinner
- **Graph Enhancement Controls**

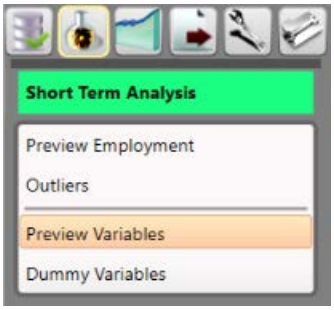


Figure 1: Preview Variables module selection

Preview Variables

1. **Select a Monthly Variable Type** from the drop-down menu.
2. **Select a Monthly Variable**.

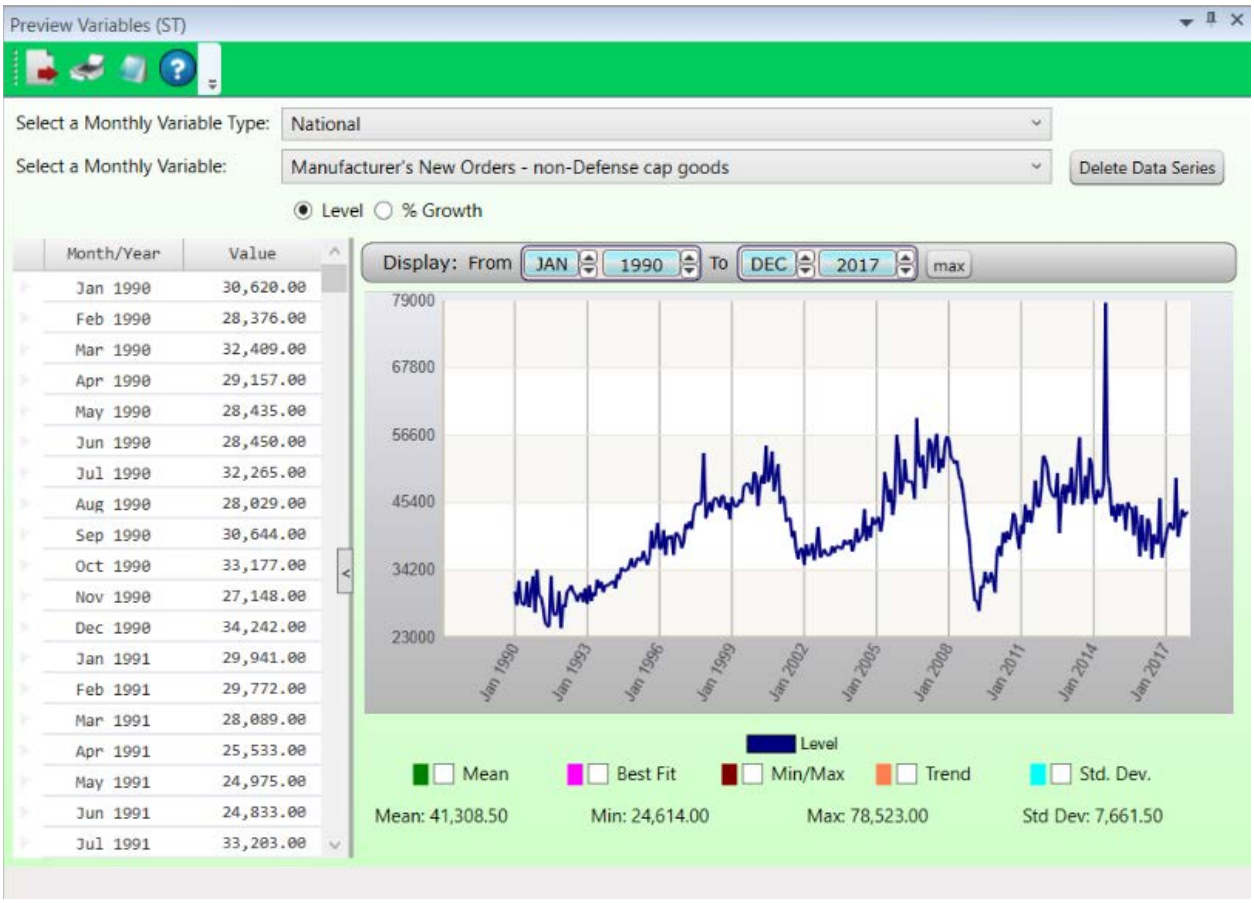


Figure 2: Preview Variables module

3. Click either the **Level** or **% Growth** radio button.

- The **Level** radio button displays the actual employment data charted.
- The **% Growth** radio button displays the percent of change of the data charted. The growth calculation represents the compounded annual growth rate for the two-year projection period. A Growth Rate document is available on the Projections Central website under the Short Term Resources section.

4. Change the display months and years by adjusting the Display date spinner, or by selecting a point on the graph. The graph will be updated automatically as changes are entered using these controls. Graph Enhancement Controls can also be used to overlay statistical measures on the graph.

The **data grid** displays the date (**Month/Year**) and employment level (**Value**) for the selected area and industry historical series. When scrolling through the data grid, a date pop-up will appear (see Figure 2). As you move the scroll bar, the pop-up will display the month/year in chronological order. When the desired date

is located in the series, release the mouse button and the selected date will appear at the top of the grid.

Figure 3: Date pop-up

☞Alternatively, click on a value in the data grid and move up and down through the series with the keyboard arrow buttons.

Edit the Data Grid:

1. Highlight the row you want to adjust.
2. **Right click** and select **Add**, **Edit**, or **Delete** from the context menu.

- To **add new information**, select **Add**. A new record will appear at the top of the grid. Double-click in the blank **Month/Year** field and enter the date.

☞You can enter the date as Oct 2008, October 2008, or 10 2008. All of these examples will format to Oct 2008.

☞This is a method to add a single value. To enter several at once, use Import Spreadsheet.

- Press **Tab** to or double-click the **Value** field to enter a value. Press **Enter** to add the record and the value will be sorted into the proper order within the grid. **Right click** and select **Cancel Add** to delete the new row without adding it to the data series.
- To edit a value, **right click** it and select **Edit**. Type the new value and press **Enter** to save it.
- To **delete an observation** from the series, **right click** it and choose **Delete**. When prompted, click **Yes** to delete the record.

☞Multiple rows can be deleted simultaneously. For instructions on making multiple selections, click here.

Additional Preview Variables Options

Click the **Review Related Industries** button, to display a list of industries related to the selected industry in a new window.

Click the **Delete Data Series** button to remove variable data from the selected variable type.

Export/Print the Variable Information

- Click **Export** on the Active Screen Toolbar to create a spreadsheet with the variable data.
- Click **Print** to print the variable data.

Related Content

- Variable Directory
- Review Variables
- Export Variable Series

Dummy Variables

Use the **Dummy Variables** module to create or modify dummy variables for use in the Leading Index and Project Single Region modules.

Dummy variables are used when there is a major discontinuity in a data series. Create dummy variables to represent key events at a point in time or to represent a series of data points for a specific period. For example, an analyst may want to contrast differences in the economy during a different tax season, during hurricane recovery efforts, or after a major business center was built in an MSA. Dummy variables are available for use by some models to affect the projected values for industries.

Screen Controls

- **Select Variable** drop-down
- **Variable Type** drop-down
- **Add** button
- **Delete** button
- **Save** button
- **Cancel** button
- **From/To** date spinner
    - **Max** button
- **Wrap Mode** check box
- **Add Values** button
- **ON** button
- **OFF** button
- **All ON** button
- **All OFF** button
- **Remove Value** button

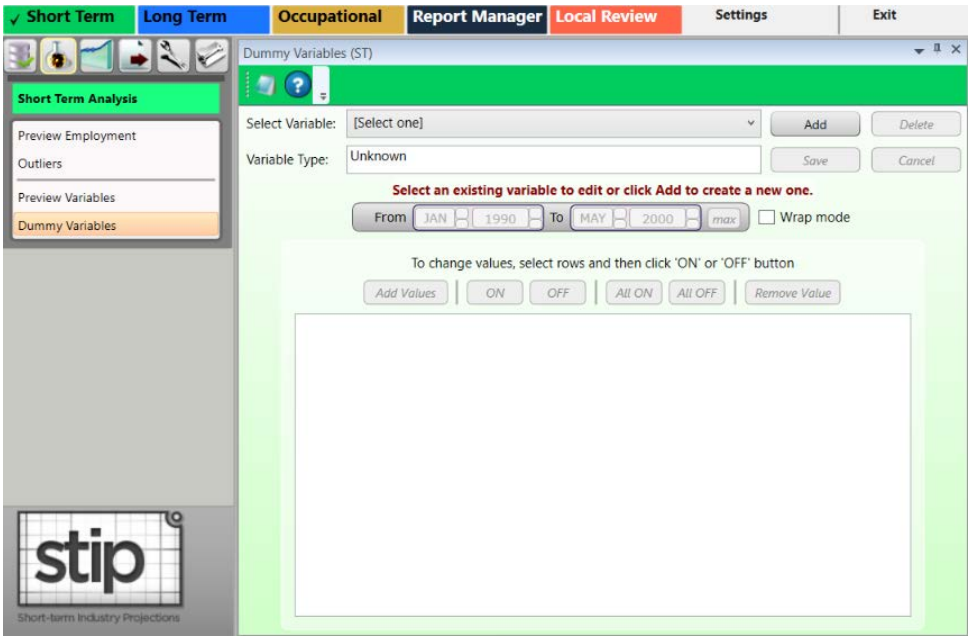


Figure 1: Dummy Variables module

Add a Dummy Variable

1. Click the **Add** button. The Add Variable dialog box will be displayed.
2. Type a **Variable Name** and select a **Variable Type**.
3. Click the **OK** button. The new variable will be added to the Dummy Variables screen:

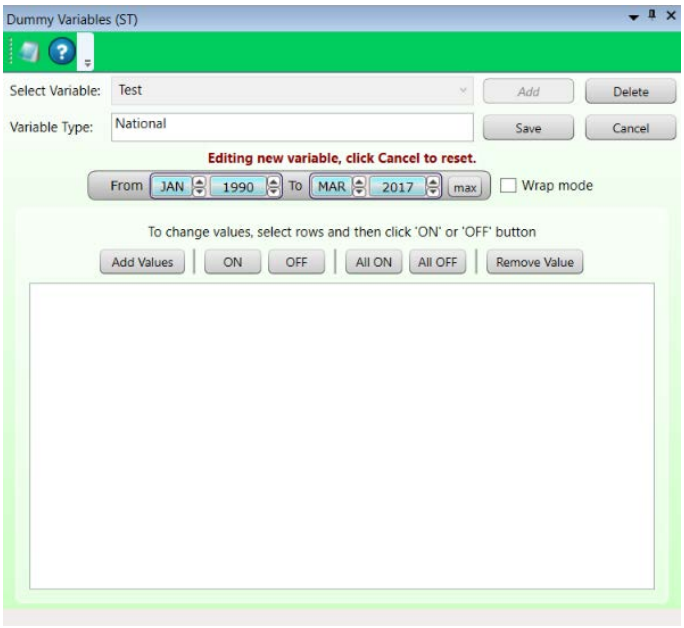


Figure 2: Test variable added to Dummy Variables

4. Use the **From/To** spinners to select the **From** and **To** dates.

- Click the **Max** button to automatically set the longest time frame possible.

5. Click **Add Values**. Values from the selected months and years will populate in a list.

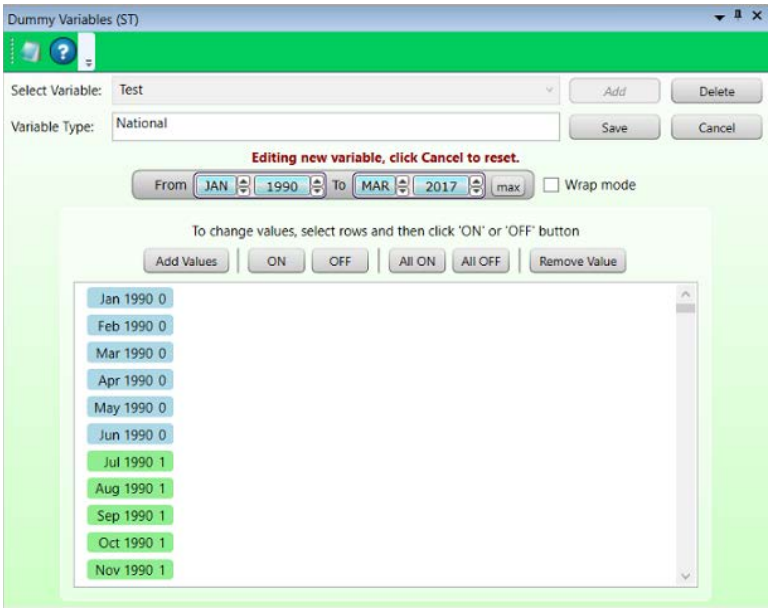


Figure 3: Date values listed

6. To wrap the variables in the box, click **Wrap mode**.

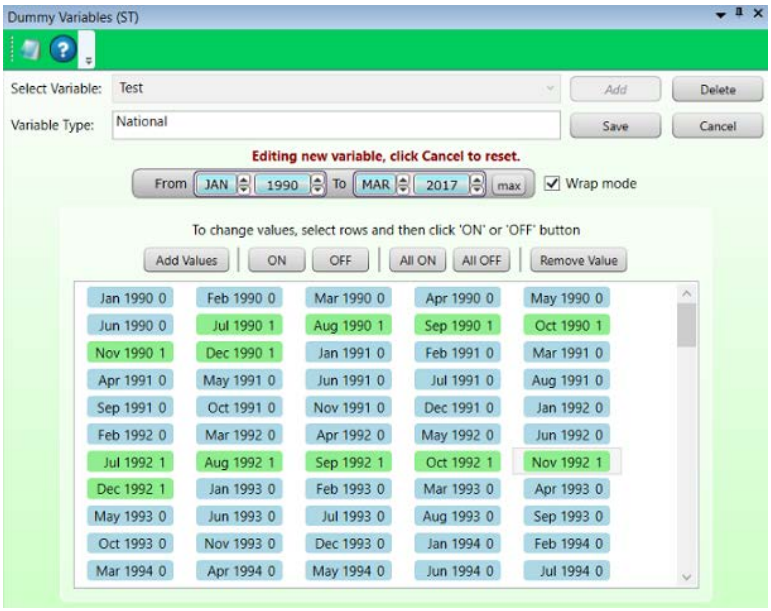


Figure 4: Wrap mode

Dummy variables have two values, either a zero or a one. The default value is zero. A one corresponds to (or is used to "mark") some event or value that needs to be displayed for a specific month/year.

- Select the value and click **ON** to change the variable value to one.
- Select the value and click **OFF** to deselect the value.
- Click **All ON** to select all values.
- Click **All OFF** to deselect all values.
- Click **Remove Value** to remove a selected value from the list.

☞Multiple values can be selected at once. For assistance with selecting multiple variables at a time, click here.

7. Once all values you want included are modified, click **Save**. The variable will become available for selection and use in the Leading Index and Project Single Region modules.

Edit a Dummy Variable

1. Select a variable from the **Select Variable** drop-down menu.
2. Edit the values using the listed controls.
3. Click the **Save** button when the variable has been modified to your specification.

Delete a Dummy Variable

1. Select a variable from the **Select Variable** drop-down menu.
2. Click the **Delete** button. A **Delete Monthly Variable** dialog box will be displayed.
3. Click **Yes** to delete the variable. Click **No** to keep the variable.

Short Term Projections Menu Items

Short Term Projections Introduction

Use the **Short Term Projections** group menu items to analyze variables, project industry employment values, view and analyze projections, and roll up projections.

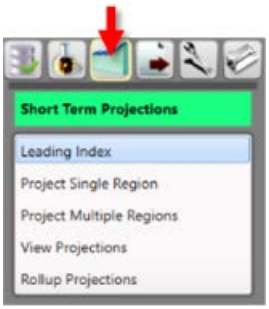


Figure 1: Short Term Projections group menu

The Short Term Projections group menu contains the following selections:

- Leading Index
- Project Single Region
  - Results Graph Tab
  - Statistical Details Tab
  - Details Graph Tab
  - User Defined Models Tab
- Project Multiple Regions
  - Industry View Tab
  - Area View Tab
- View Projections
- Rollup Projections

Leading Index

The purpose of the **Leading Index** module is to choose and evaluate variables to be used to project industry employment. Selecting, processing, and saving of different variable/area combinations can enhance the accuracy of projections. Use variables to analyze state and sub-state areas as prime factors in explaining the economic activity in the projections process. Model types that use the leading index variables are OLS, VAR, and BVAR when the "Variables" option is selected in Project Single Region (see Figure 1).

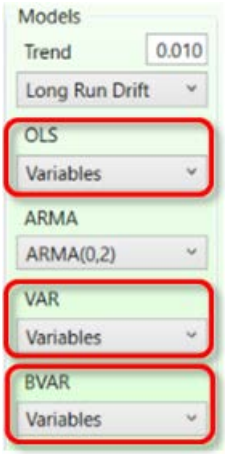


Figure 1: Variables selections in Project Single Region

A prerequisite to running the Leading Index module is that you must already have the total employment for the selected area imported for the Leading Index to process. The variables are evaluated with the total employment to see how well they compare.

Screen Controls

- **Select an Area** drop-down menu
- **Start/End date** spinner
  - **Max** button
- **Analyze** button
- **Save** button
- **National** tab
- **State** tab
- **Regional** tab
- **Graph** tab
- **Select National Variables to Analyze** list box

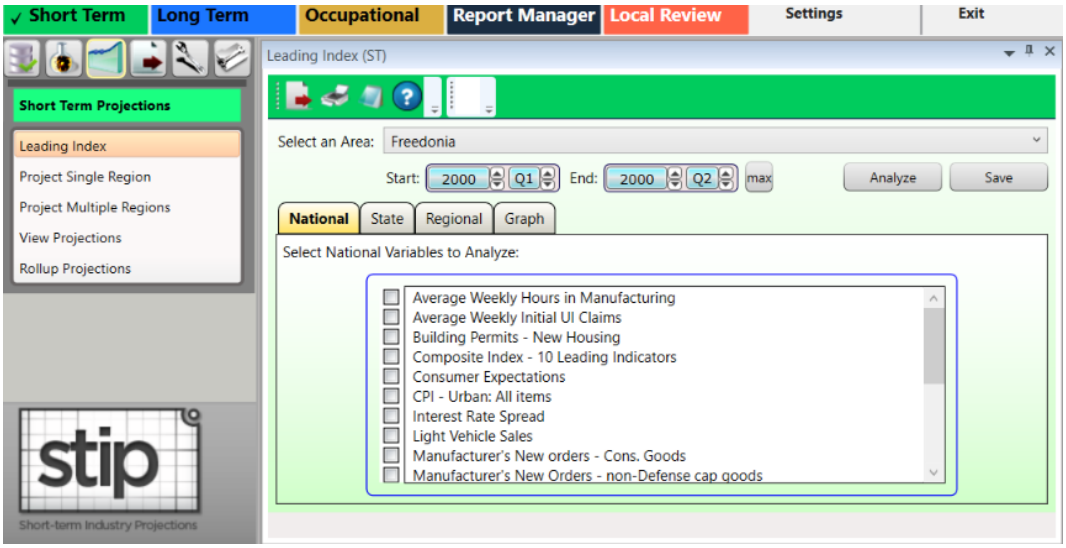


Figure 2: Leading Index module

Analyze Variables

1. **Select an Area** from the drop-down menu.

2. Select a time frame using the **Start/End date** spinners. Default date values as determined by variable data will be displayed.

- Click the **Max** button to automatically set the longest time frame possible.
- Data imported into the system are monthly data points, but are displayed as quarterly in this evaluation.

☞These controls set the time frame for evaluating how well the variables follow the total employment for the area. The analysis is broken up into the three types of variables: National, State, and Regional. Results display for each variable as well as how all variables did together.

3. Select the variables to be analyzed from each tab.

☞Variables from any combination of the National, State, or Regional tabs can be selected for the same analysis. No more than six variables can be selected on each tab.

4. Click the **Analyze** button. The Variable Name, and 2 Quarter and 4 Quarter Horizon lead times will display in a table at the bottom of the screen.

- The National variables display on the National tab, the State on the State tab, and Regional on the Regional tab.

- The **All Variables Combined** portion of the table includes National, State, and Regional variables, and displays on each tab.

Selected variables are analyzed to determine their effectiveness against the total employment for the area. There are two analytical lead times displayed for this screen, a two-quarter horizon and a four-quarter horizon. There are also two parameter values for each lead time frame: % Turns, and Historical Fit (see the bottom of Figure 3).

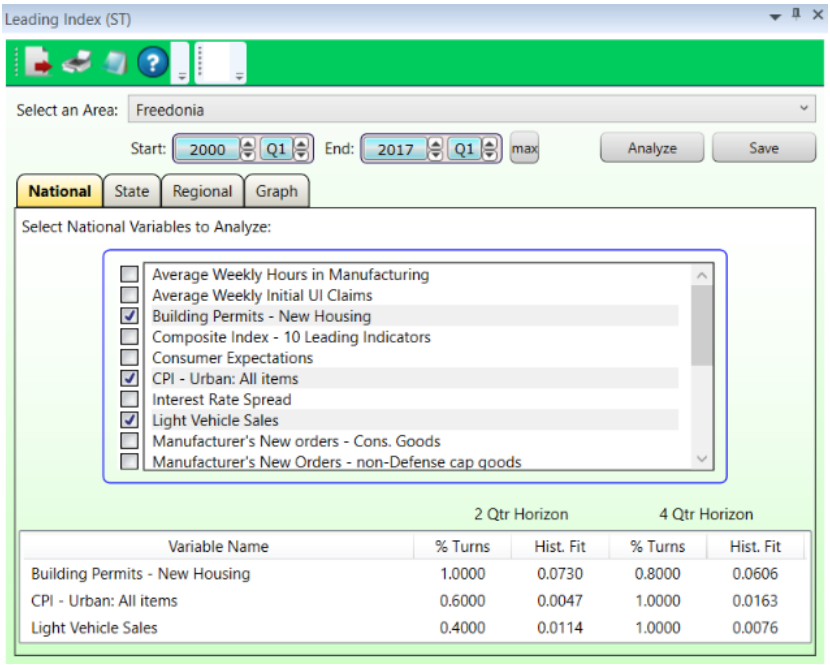


Figure 3: Data displayed in table

The **% Turns** parameter reveals the effectiveness of the index against the total area employment to determine what percent of the turns are captured. The goal is a value of 1.0000, or close to it. The Historical Fit parameter displays the Adjusted R-Squared statistic for each regression equation evaluated. This indicates the general explanatory power of the index relative to variation in the employment series.

When more variables are used, better results for the % Turns and Historical Fit are usually produced, but the results can be misleading. Increasing the number of variables is contrary to having the most efficient results. Capturing the turns and Historical Fit using fewer variables (3-5) has better predictive capabilities than using many (i.e., the maximum of 18) variables.

The selected Leading Index variables will serve as a default set of explanatory variables in the OLS, VAR, and BVAR projection models. The selection of variables may require various trial and error analyses to find a set that works for an area.

Each of the variable types (National, State, and Regional) are displayed and evaluated on their respective tabs. Each of the variable lead values are calculated individually, then as combined variables. Finally, all the variables are calculated together to show how effectively they do together. Each of the variable type tabs will display the combined variable values.

Display the Leading Index Values in Graph Form

1. Click the **Graph** tab.
2. Click the **Level** or **Growth** radio buttons to display graph details.

- The **Level** graph displays the Actual values as well as projected values for the 2 Lead and 4 Lead.
- The **Growth** graph has some additional information to help in the analysis. Whenever there are at least two consecutive quarterly growth increases followed by a consecutive growth decrease, the label **DT** displays to indicate a **downturn** in the economy. Conversely, whenever there are at least two consecutive quarterly growth decreases, followed by a consecutive quarterly increase, the label **UT** displays to indicate an **upturn** in the economy. Overall growth values for the actual 2 Lead and 4 Lead are displayed along the bottom of the graph.

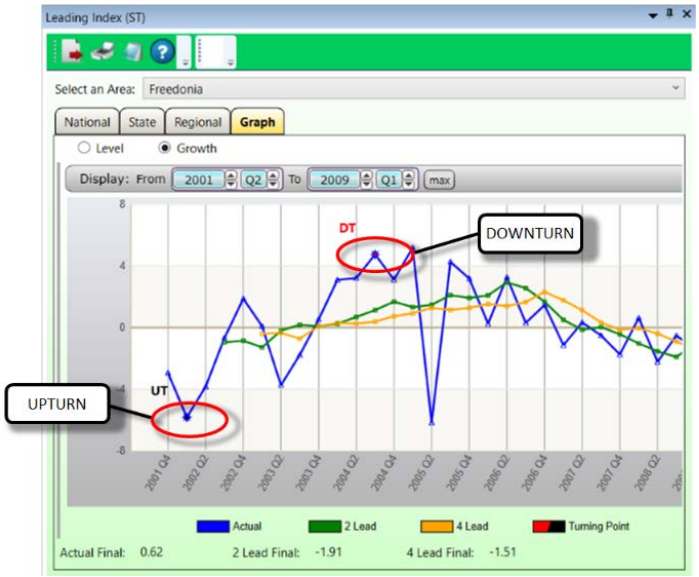


Figure 4: Leading Index growth graphed data

Save the Leading Index Variables

1. Once a set of variables has been selected, use any tab except for the Graph tab to click the **Save** button to use the leading index variables in the Project Single Region module (when the Variables option is selected for a model). A dialog box will be displayed.
2. Click **OK** to save the data.

Related Content

- Project Single Region

Project Single Region

Use the **Project Single Region** module to project industry employment for a selected area using various economic models.

This is the main module for calculating projections in the Short Term application. The expression short-term means projected values are calculated for a two-year time frame. To use this module, all employment data importing, review and analysis tasks, as well as any variable evaluation preparations and creation are required. Save the projected industry information to use in the Occupational Projections application or for other reporting purposes.

Screen Controls

- **Select an Area** drop-down
- **Select Industry** drop-down
- **Related Industries** button
- **Start Quarter** spinner
- **Models** selection group
  - **Trend** drop-down
  - **OLS** drop-down
  - **ARMA** drop-down
  - **VAR** drop-down
  - **BVAR** drop-down (if the User-defined module is visible, this will be a fill-in field)
- **Tournament** button
- **Save Projections** drop-down menu
- **Save** button
- **View Errors/View Data** toggle button
- **Results** tab
- **Results Graph** tab
- **Statistical Details** tab
- **Details Graph** tab
- **User Defined Models** tab
- **Projections Process** buttons
  - **Step 1** button
  - **Step 2** button
  - **Step 3** button

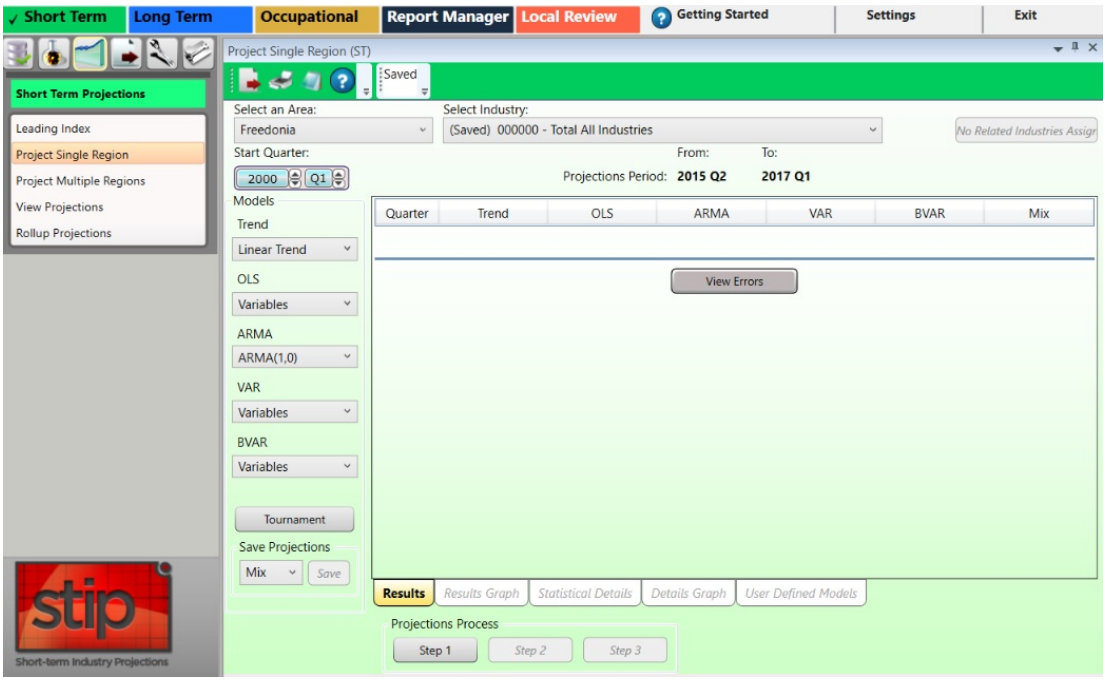


Figure 1: Project Single Region module

Set Up Project Single Region

1. **Select and Area**.
2. Select an industry from the **Select Industry** drop-down menu.

- Optionally, click the **Related Industries** button to view the industries that will be included, if the industry has related industries. If the industry does not have related industries, the button will be unavailable and read *No Related Industries Assigned*.

☞This option is for viewing only and not for setting the Related Industries. To set related industries, refer to the Manage Related Industries module.

3. Set the **Start Quarter** year and quarter using the date spinner. The Start Quarter date spinner is populated with the quarter date that corresponds to the beginning monthly value of the selected industry. Keep in mind (and this is an important distinction) that the imported industry employment data is for monthly observations but the output for projected values will be displayed by quarter.

The Projections Period label displays just below the Select Industry drop-down, and is based on the projection round that was defined and selected in the Manage

Rounds module. The Projections Period information changes when you move through Steps 1, 2, and 3 (follow the link for a detailed description of the steps).

☞When this module is first opened, this label will be set to the Step 1 time frame, which is 24 months back from the round setting.

4. Select models from the **Models** selection group. The Models selection group contains five model types that are available for processing projections: Trend, OLS, ARMA, VAR, and BVAR. Each model type contains a number of models available for selection.

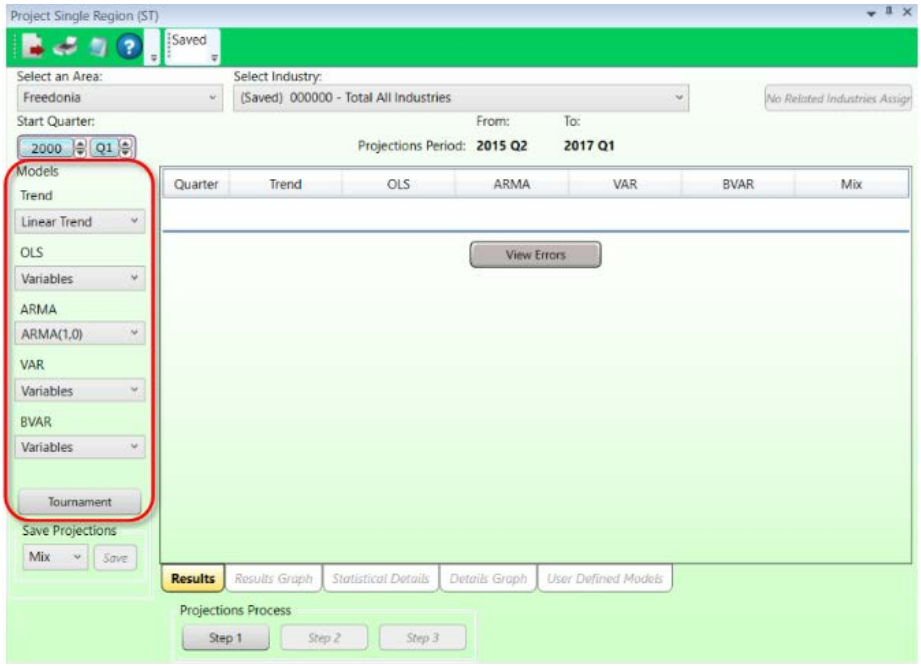


Figure 2: Models selection group

Tournament Button

The Tournament button is optional, available to process all four Trend models, all four OLS, VAR, and BVAR models, and all nine ARMA models. By clicking the Tournament button, the system will process all the models and select a winner from each model type. The winner for each type is the model with the lowest Mean Absolute Percent Error (MAPE). The Tournament button is available to help pare down the models, but is not required to run before continuing with the Projections Process steps. Click the **Tournament** button to use this automatic method to select models.

Manually Customize Models

Manually select options from the Trend, OLS, ARMA, VAR, and BVAR model drop-down menus. Model options use the information you set up previously in the Short Term Projections modules.

☞If you select User-defined from the OLS, VAR, or BVAR model drop-down, the User Defined Models tab will activate. See User Defined Models for more information.

☞If you select an industry with related industries and one of the related industries does not have monthly employment data, a Step Completion Issue dialog will be displayed and the projection will not run. To set related industries, refer to the Manage Related Industries module.

5. When the models have been selected, either with the Tournament button or manually, you are ready to proceed to through the Projections Process Step buttons.

Projections Process Step Buttons

1. Click **Step 1**. Step 1 selects data from the starting quarter to 24 months back from the ending date of the selected round. This gives an idea of how well the projections do against the actual employment for the 24-month period.

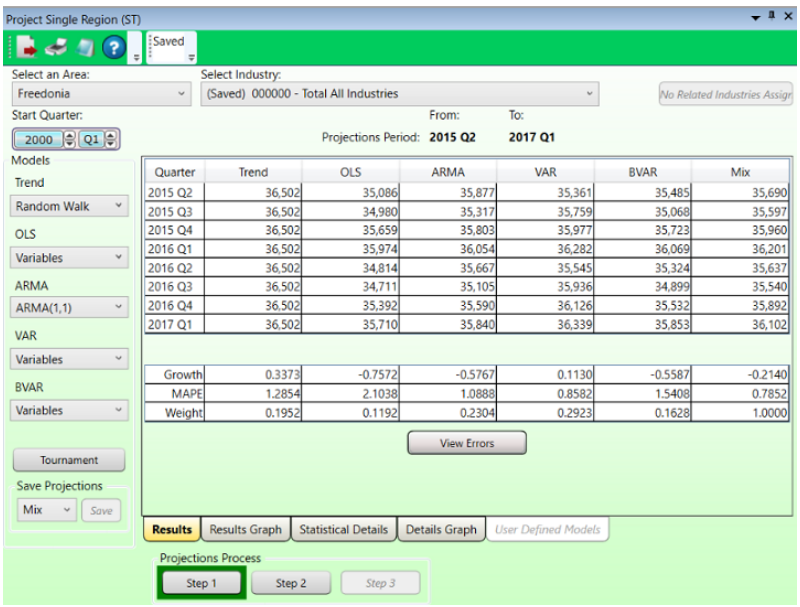


Figure 3: Step 1 results on the Results tab

The calculated projected employment values display in a table on the **Results** tab. The **Mix** column displays values that are calculated using the weights of each of the other methods. Toggle the **View Errors/View Data** button to view the errors (percent difference between the projected and actual values) for each step.

☞The values produced during each step are for analysis. The step process allows you to view projections at different intervals to help determine the best final values. Various tabs with different data views are available (listed below).

2. Click the **Step 2** button. Step 2 selects data from the starting quarter to 12 months (4 quarters) back from the ending date of the selected round. This gives an idea of how well the projections do against the actual employment for the 12-month period. The calculated data displays in the **Results** tab. Clicking the **View Errors/View Data** toggle button will display errors for four quarters on Step 2.

3. Click the **Step 3** button. Step 3 selects data for the full period set by the round, and projects out 2 years (8 quarters) – the full projection period. At the conclusion of this step, you are able to save Forecast Values from your choice of models.

The calculated data displays in the **Results** tab. Clicking the **View Errors/View Data** toggle button in Step 3 will display no errors, because there are no actual values with which to compare the projected values.

After running **Step 3**, projected values are available to be saved as the final values.

Save Calculated Data

1. Select an option from the **Save Projections** drop-down menu. Save the projection values after choosing and processing them through all 3 steps, analyzing them and evaluating them for the projected models.

2. Click the **Save** button. The **Save** button is only available while in the **Results** tab. The default model is Mix, but it is valid to choose any of the other five models. Saving the values updates any previously saved values. After saving an Industry Projection, the saved quarterly values will be available in the View Projections module.

In addition, the saved status changes in the Active Module Toolbar and the industry title in the combo box will change to saved status as well. The saved information includes eight quarterly values for the selected area, industry, models

chosen, the model saved, and a date time stamp. Additionally, information is written to the Notebook when the final values are saved.

☞You must save a state projection for each industry prior to running sub-state projections using the Project Multiple Regions module.

Results, Statistical, Details, and User Defined Models Tabs

Follow the links for explanations of the additional tabs:

- Results Graph tab
- Statistical Details tab
- Details Graph tab
- User Defined Models tab

Results Graph Tab

The Results Graph tab is a visual display of the historical series and the eight quarterly projected values for each model type. Colored lines represent each of the projected model types.

Screen Controls

- **Display date** spinner
- **View Graph Data** button

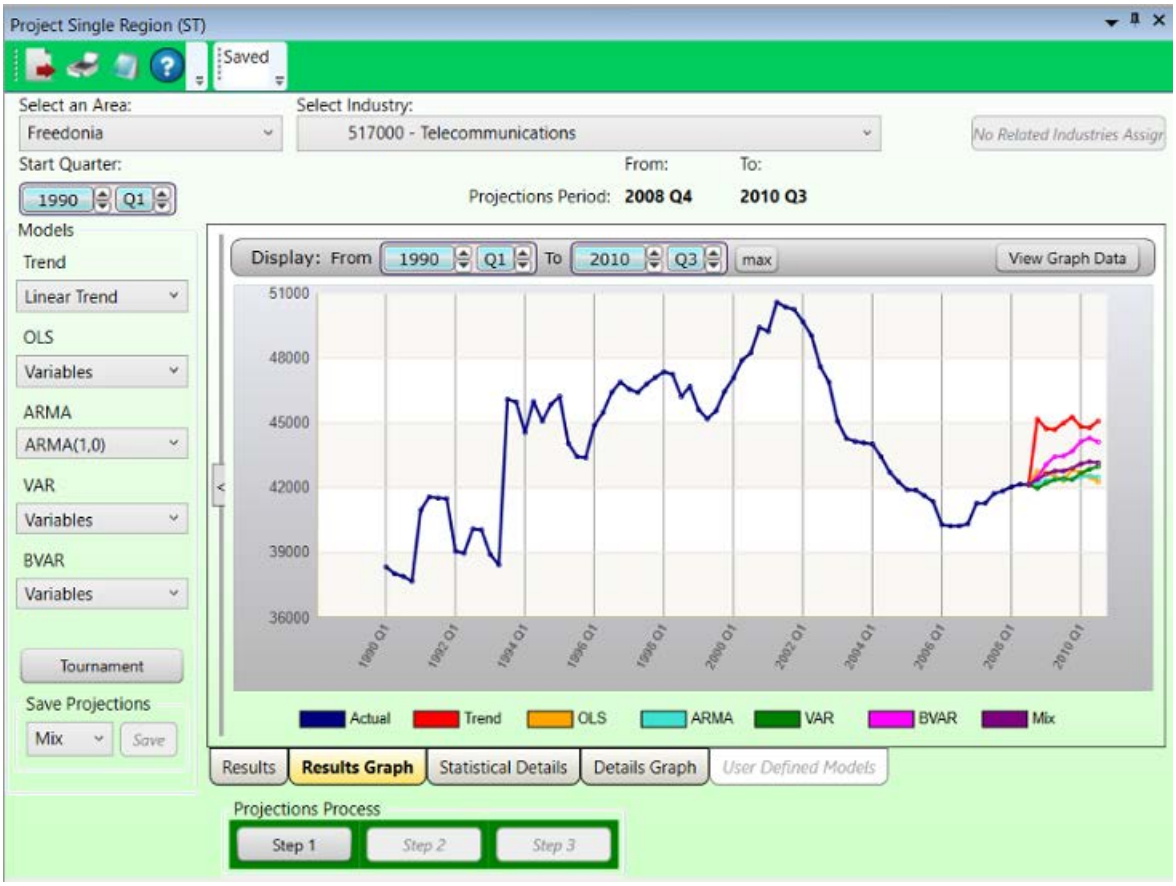


Figure 1: Results Graph tab showing the actual and projected data

Manipulate the Display date spinners to zoom in or out on the graph within a date range. You can also select chart dates with the mouse to look at the information more closely.

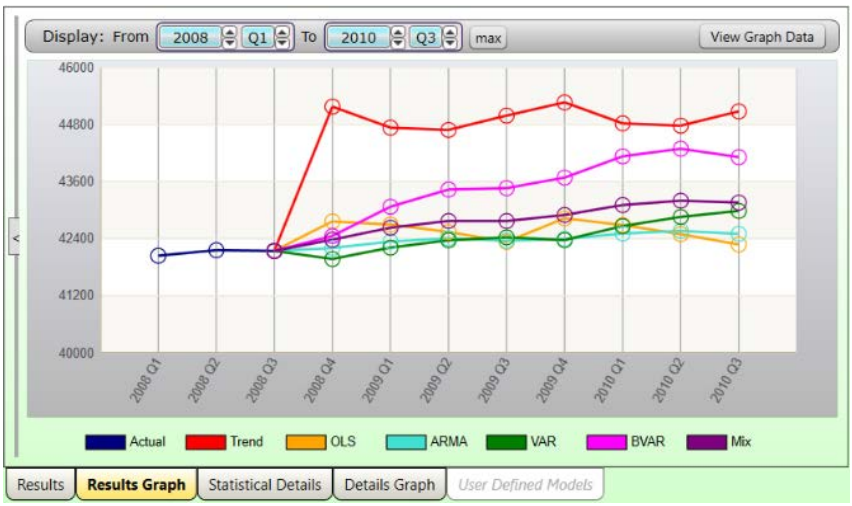
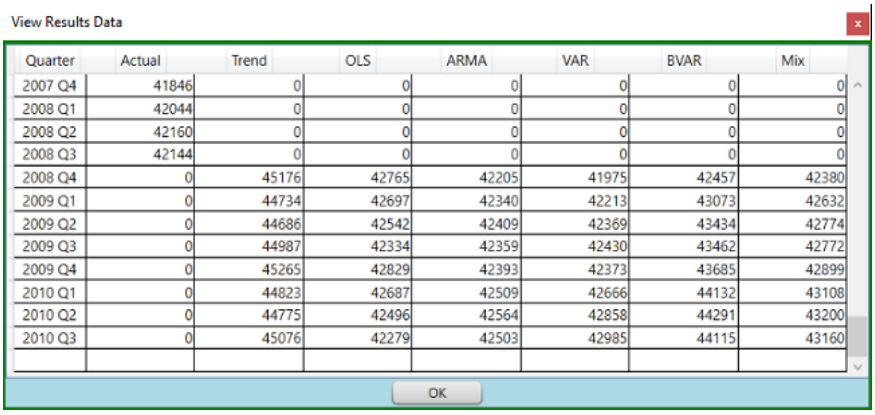


Figure 2: Results Graph tab projected values, zoomed in

Click the **View Graph Data** button to open the table of figures used to calculate the graph in a new (**View Results Data**) window. Projected values will be near the bottom of the table.



Quarter	Actual	Trend	OLS	ARMA	VAR	BVAR	Mix
2007 Q4	41846	0	0	0	0	0	0
2008 Q1	42044	0	0	0	0	0	0
2008 Q2	42160	0	0	0	0	0	0
2008 Q3	42144	0	0	0	0	0	0
2008 Q4	0	45176	42765	42205	41975	42457	42380
2009 Q1	0	44734	42697	42340	42213	43073	42632
2009 Q2	0	44686	42542	42409	42369	43434	42774
2009 Q3	0	44987	42334	42359	42430	43462	42772
2009 Q4	0	45265	42829	42393	42373	43685	42899
2010 Q1	0	44823	42687	42509	42666	44132	43108
2010 Q2	0	44775	42496	42564	42858	44291	43200
2010 Q3	0	45076	42279	42503	42985	44115	43160

Figure 3: View Results Data window, opened by clicking the View Graph Data button

Clicking on any of the Project Single Region controls (Models control group, Select an Area drop-down, etc.) will revert you back to the Results tab to conduct another analysis.

Related Content

- Project Single Region
- Statistical Details tab
- Details Graph tab
- User Defined Models tab

Statistical Details Tab

The **Statistical Details** tab displays statistical information about the projected values for the selected Projection Process step. Various statistics display to help determine the validity of the projections.

Screen Controls

- **Model Details** control group
  - **Trend** button
  - **OLS** button
    - **Correction** button
  - **ARMA** button
  - **VAR** button
    - **Show FStats** button
  - **BVAR** button

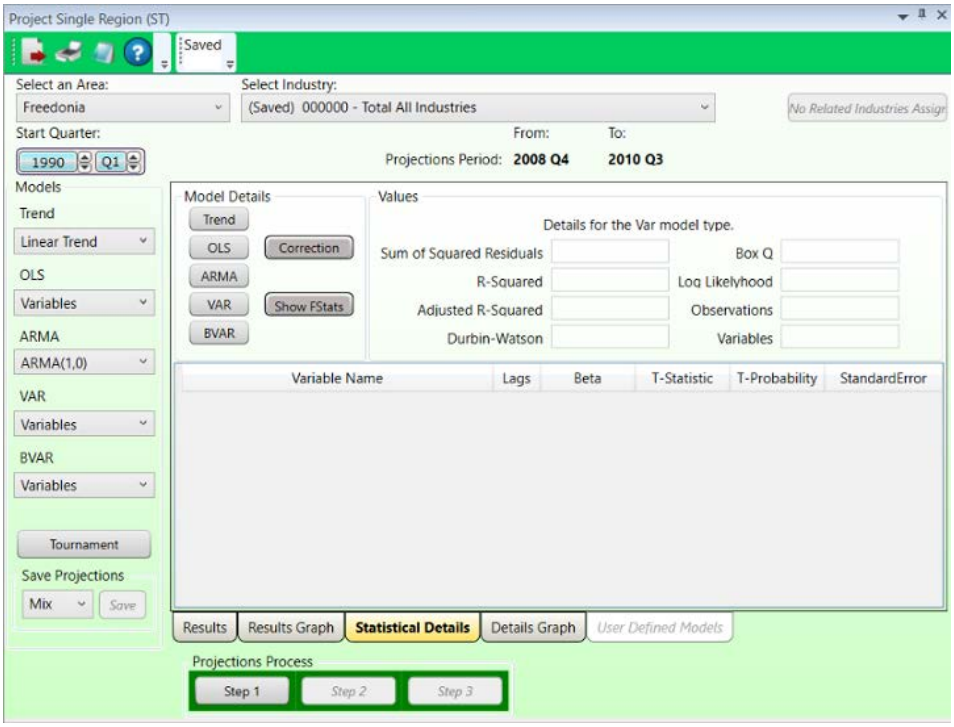


Figure 1: Statistical Details tab

Display Data on the Statistical Details Tab

1. Click the desired **Model Details** button from the control group. These statistics will help determine what model values are the best. The statistic's **Values** will

display where applicable, for the selected **Model Details**. If N/A displays, that statistic is not available for that model.

Values/Details table:

- Sum of Squared Residuals
- R-Squared
- Adjusted R-Squared
- Durbin-Watson
- Box Q
- Log Likelihood
- Observations
- Variables

Each model displays different statistics in the table for each variable name:

- The number of Lags
- Beta
- T-Statistic
- T-Probability
- Standard Error

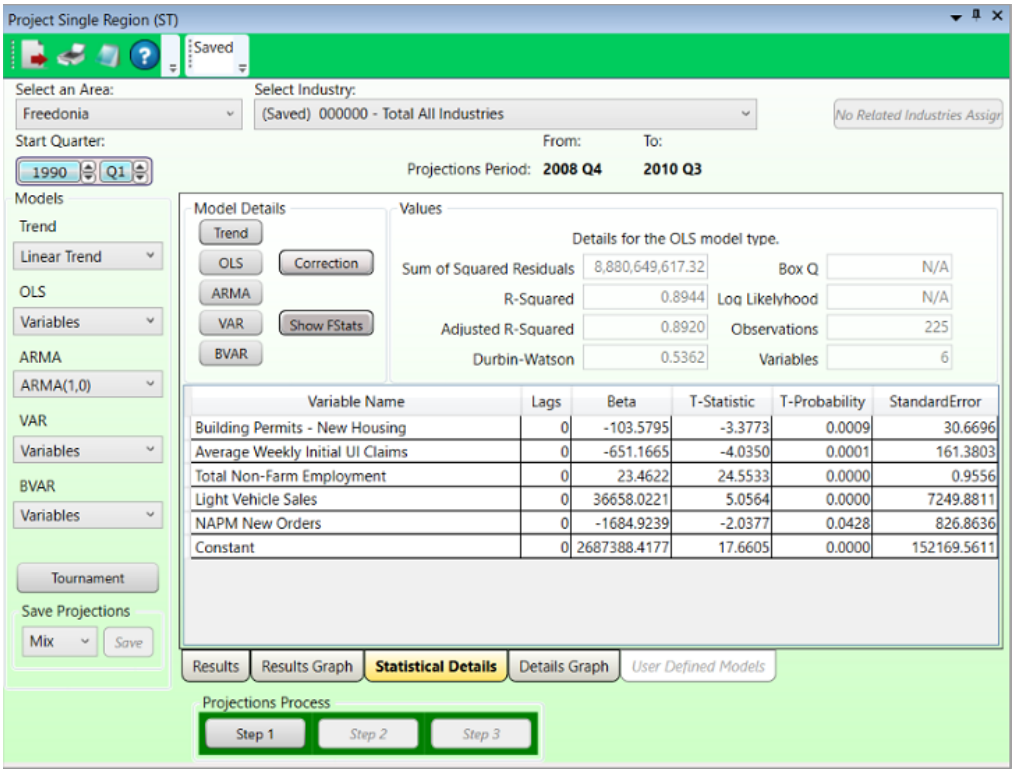


Figure 2: OLS selected from the Model Details control group

The **Trend Model** displays 12 monthly variables, plus the constant. OLS, VAR, and BVAR models display the variables selected in the Leading Index module. VAR and BVAR repeat, depending on the number of lags used (the default is six).

Two models, OLS and VAR, have buttons associated with them.

The OLS **Correction** button is available when you finish **Step 3.** Click the OLS button on the Statistical Details tab, view the Details Graph tab for OLS, then return to the Statistical Details tab. This is required so you can review the predicted values on the Details Graph to see any correctable anomalies. Then use the OLS Correction button to correct and review the data series and projected values. A Correction Variable will be added on the Statistical Details tab. You can go back to the Details Graph to view the correction on the graph.

Figure 3: Before (top) and after (bottom) OLS Correction

The **Show FStats** button becomes available when you click the **VAR** button. The F-Statistics window (see Figure 4) displays variable names, F-Statistics, and F-Probabilities for the variables chosen in the Leading Index module.

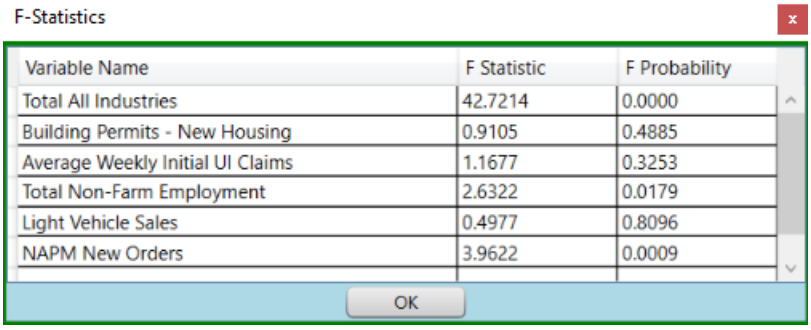


Figure 4: F-Statistics

Related Content

- Project Single Region
- Results Graph tab
- Details Graph tab
- User Defined Models tab

Details Graph Tab

The **Details Graph tab** displays the actual series and the predicted values for the Projections Process step selected, when the **Predictions** radio button is selected. The Details Graph populates only after completing the details (on the Statistical Details tab) for a model; otherwise it will only display an empty series.

Screen Controls

- **Predictions** radio button
- **Residuals** radio button
- **Display date** spinners
    - **Max** button

Figure 1: Details Graph with Predictions displayed

Another view option is available by selecting the Residuals radio button. This displays the differences between the predictions and the actual values for the selected industry.

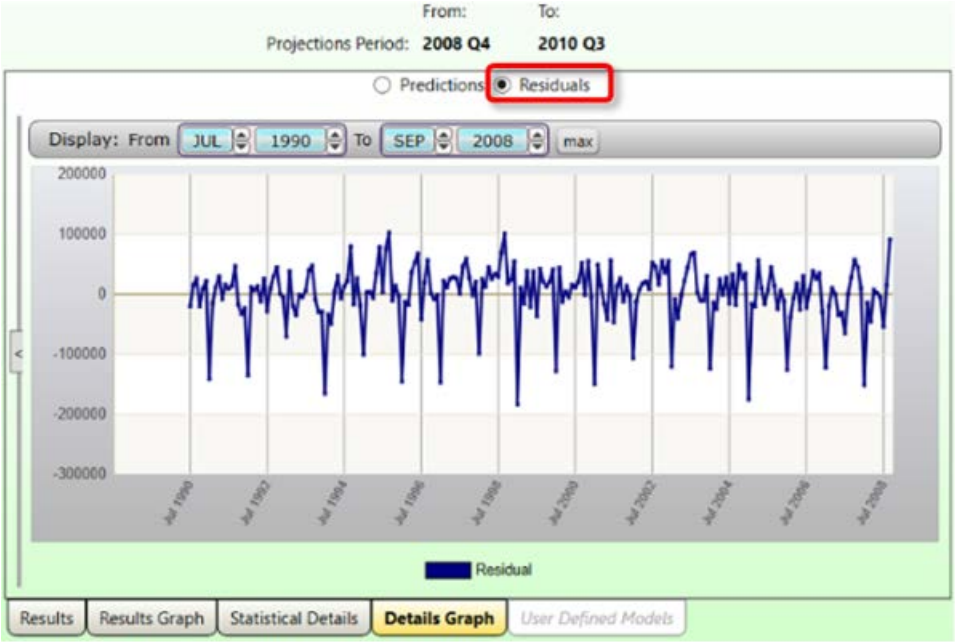


Figure 2: Details Graph displaying Residuals

Manipulate the Display date spinners to display information for a specific time period. Or, you can select chart dates with the mouse to display data from the selected time frame only.

Related Content

- Project Single Region
- Results Graph tab
- Statistical Details tab
- User Defined Models tab

User Defined Models Tab

The OLS, VAR, and BVAR models have an option to use variables defined by the user. Use this option to select the variables to use in the projection. After selecting the user-defined variables, proceed with the Projection Process steps. These variables can be from the last of national, state, or regional variables, and/or the list of industries with employment.

Selecting one of the User-defined models options from the drop-down menus in the Models control group will automatically display the User Defined Models tab, and display the variable options. These variables come from the list of imported variables or industries in the system. The User Defined Models tab displays four list boxes in a quadrant. Two are for variable and industry lists, and two are for selecting variables and industries.

Select one of three model types: OLS, VAR, or BVAR. The model type selected is the model used for those variables. The right side of the quadrant, either Variable or Industry, is the final list for each type.

Screen Controls

- **OLS** radio button
- **VAR** radio button
- **BVAR** radio button
- **Move Right** and **Left** buttons
- **Add... Index** button - add the selected leading index variables to the Selected Variables table.
- **Leading Index Variables (pie chart)** button - view the list of selected leading index variables.
- **Add... Related** button - add the list of related industries to the Selected Industries table.
- **Related Industries (building)** button - view the list of industries related to the initially selected industry (if applicable).

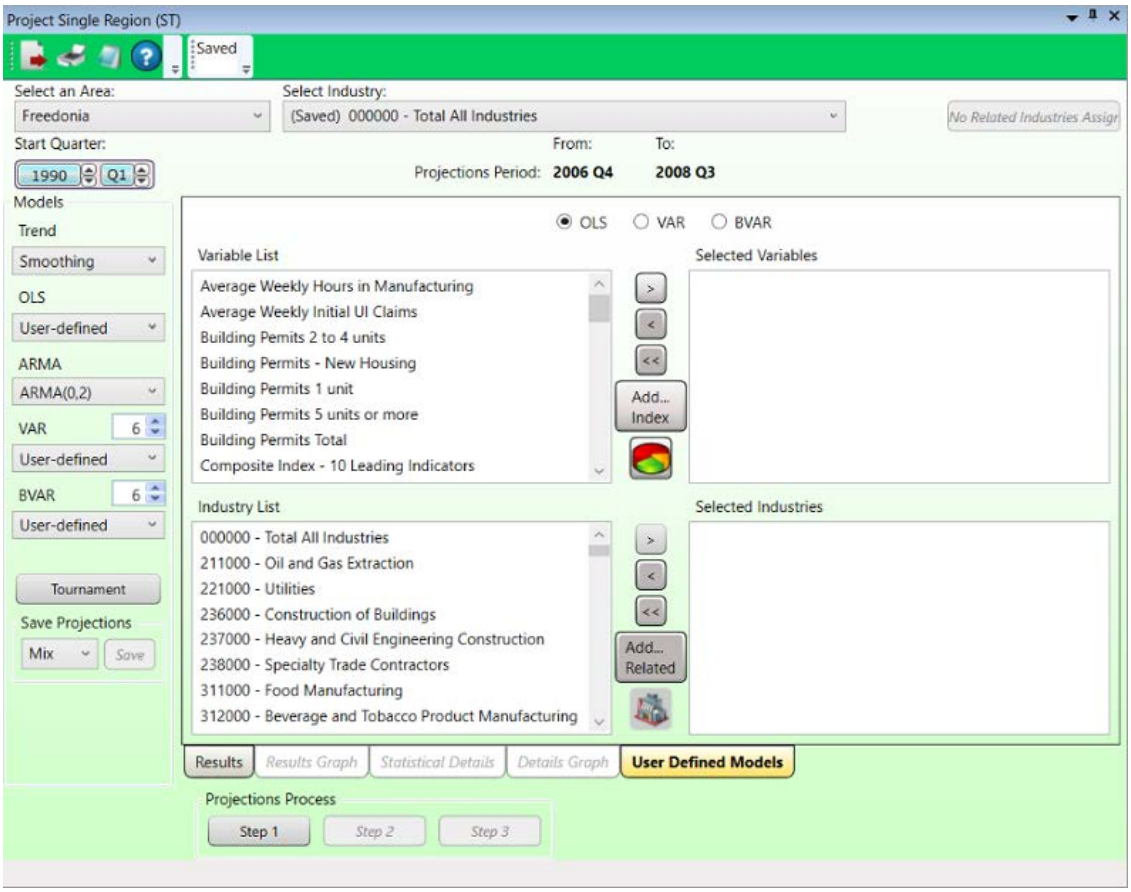


Figure 1: User Defined Models tab

Define Variables

1. Select one of the model type radio buttons to be used for the variables.

- OLS
- VAR
- BVAR

2. In the **Variable** or **Industry List**, select a variable or industry.

3. Populate the lists by clicking the right arrow to add the selected **Variable/Industry** to the **Selected Variables/Industries** table.

- To remove one **Variable/Industry** from the Selected list, select the Variable/Industry and click the left arrow.
- To remove all **Variables/Industries** from the Selected list, click the double left arrow.
- To view the variables that were selected in the Leading Index module, click the pie chart button.
- To add all leading index variables, click the **Add... Index** button.
- To view all related industries, click the building button.

- To add all related industries (if applicable), click **Add... Related**. To create or remove related industries, reference the Manage Related Industries module.

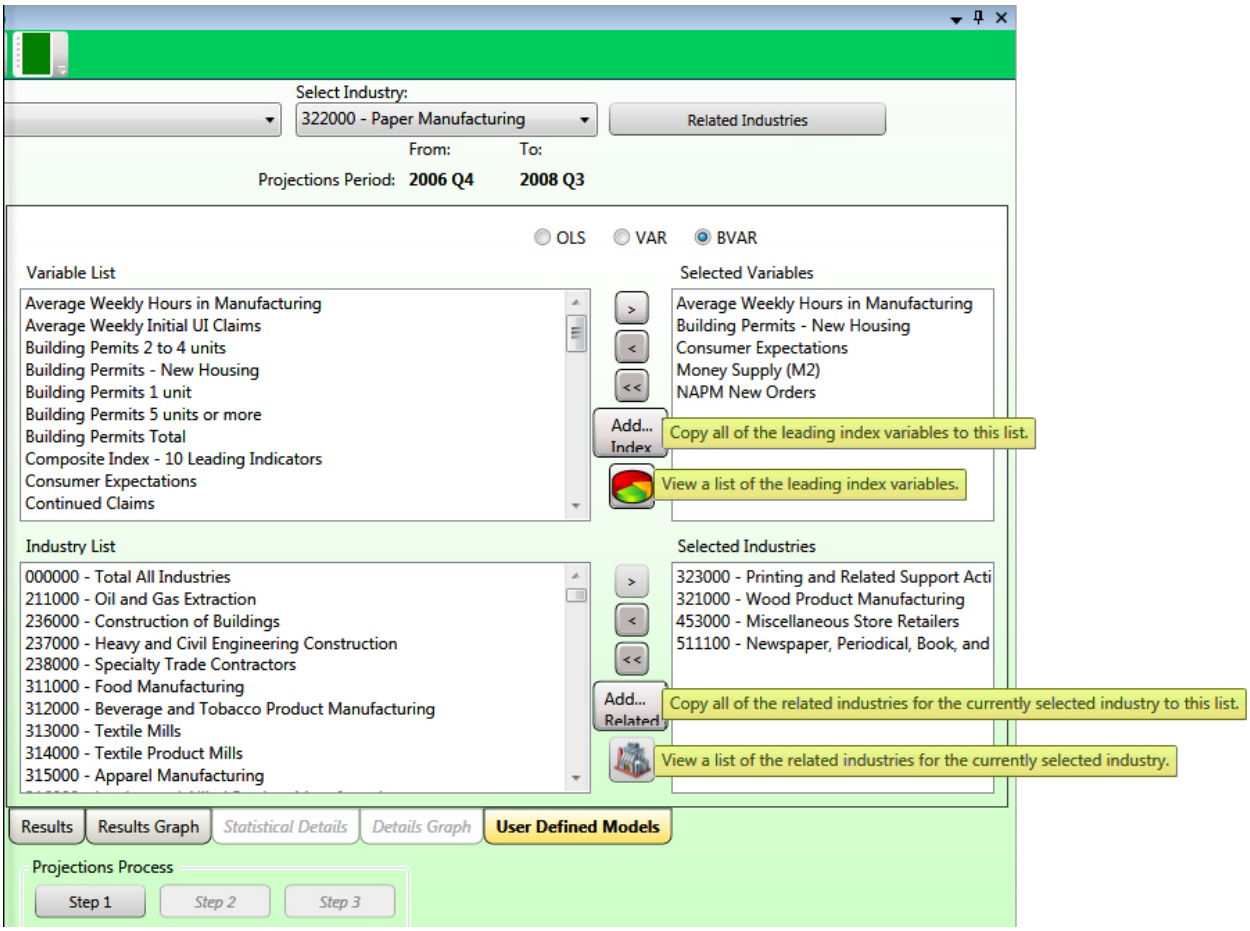


Figure 2: User Defined Models tab

☞The selected variables and industries are automatically saved for the model type chosen (OLS, VAR, or BVAR).

4. Run the Projections Process steps.

5. View the projected data from the user-defined models by clicking the available tabs in the module.

Related Content

- Project Single Region
- Results Graph tab
- Statistical Details tab
- Details Graph tab

Project Multiple Regions

Use the **Project Multiple Regions** module to streamline development of Short Term Industry Projections for multiple sub-state areas. This screen is a quick, alternative way to process sub-state area industry projections using specific models.

To use this module, the sub-state data series must be mutually exclusive and comprehensive. After statewide (aggregate area) projections are calculated, the sub-state areas plus the Balance of Area must sum to statewide totals. There can be no overlap on sub-state areas. Sub-state areas can be any area type, but in each projection process they *must be* mutually exclusive and comprehensive.

Area information should be setup and all employment data for all areas to be included should be imported, reviewed, and analyzed. If a balance of area needs to be created, that task should be complete. The Project Multiple Regions module helps identifying problems, but the initial data review should already be complete.

Screen Controls

- **Select an Area Group** drop-down menu
- **Analyze** button - Analyzes area, employment, and projections information to help in the project multiple regions module.
- **Calculate** button - This button calculates any industries listed with a check on the initial processing tab.
- **Load** button - After processing projections, this button will present all projections information from the previously calculated values.
- **Load from summary** button
- **Initial Processing** tab - Displays information about areas and industries.
    - **Select all** button
    - **Deselect all** button
- **Industry View** tab - Displays projections information after the calculations are complete.
    - **Industry** selector
    - **Date** spinners
- **Area View tab** - Displays projections information after calculations have been done to be viewed by sectors within an area.

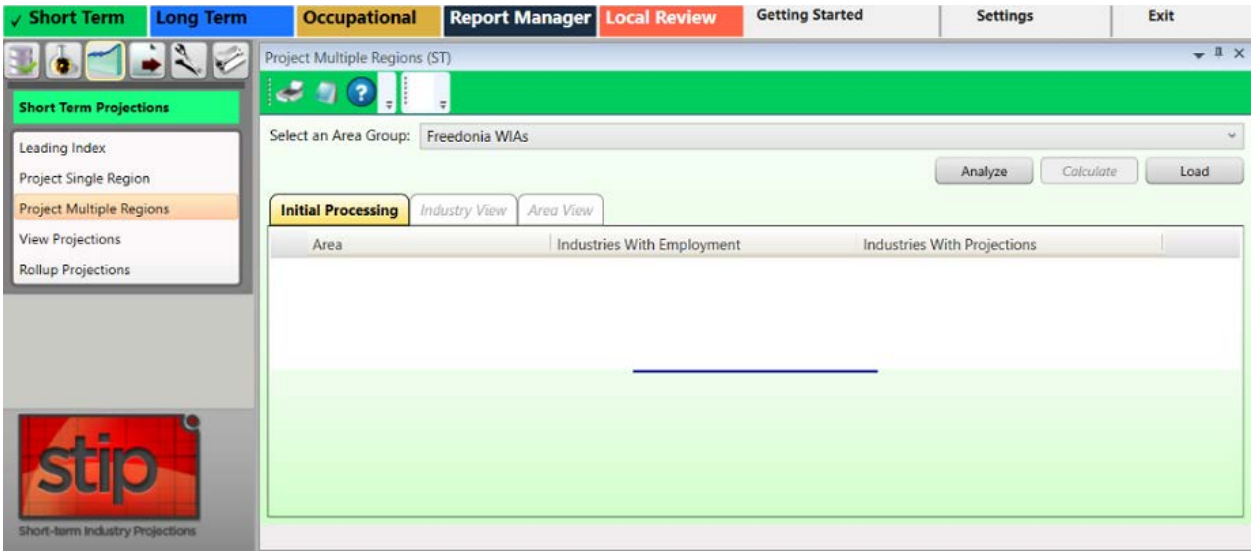


Figure 1: Project Multiple Regions module

☞Warning: All employment series must have clean data; no drastic increases/decreases (outliers, NAICS change issues, etc.). Make sure the series is correct before starting.

Develop Projections for Multiple Sub-state Areas

Initial Processing Tab

1. **Select an Area Group** from the drop-down menu. The listed areas are defined under the Data category, Manage Areas module. Once an Area Group is selected, the **Analyze** button will be enabled.

2. Click the **Analyze** button. The data processes and displays for the selected Area Group.

The upper portion of the module lists the areas included in the Area Group. Each area displays the number of industries with employment and projections, to help the analyst know totals for processing. Click the **Analyze** button as many times as needed. Ideally, the **Industries with Employment** count should be the same. **Industries with Projections** will update as they are completed in the Project Single Region module. The Industries with Projections column contains zeros for the sub-state areas until you complete industry projections.

The **Load** button will load any values that have previously been calculated in the Project Multiple Regions module and display them for analysis. Pressing the Load button will automatically open the **Industry View** tab.

☞You can close the Project Multiple Regions and the Projections Suite, then open the Projections Suite and the Project Multiple Regions module again, and click the **Load** button to reload the data and pick up where you left off.

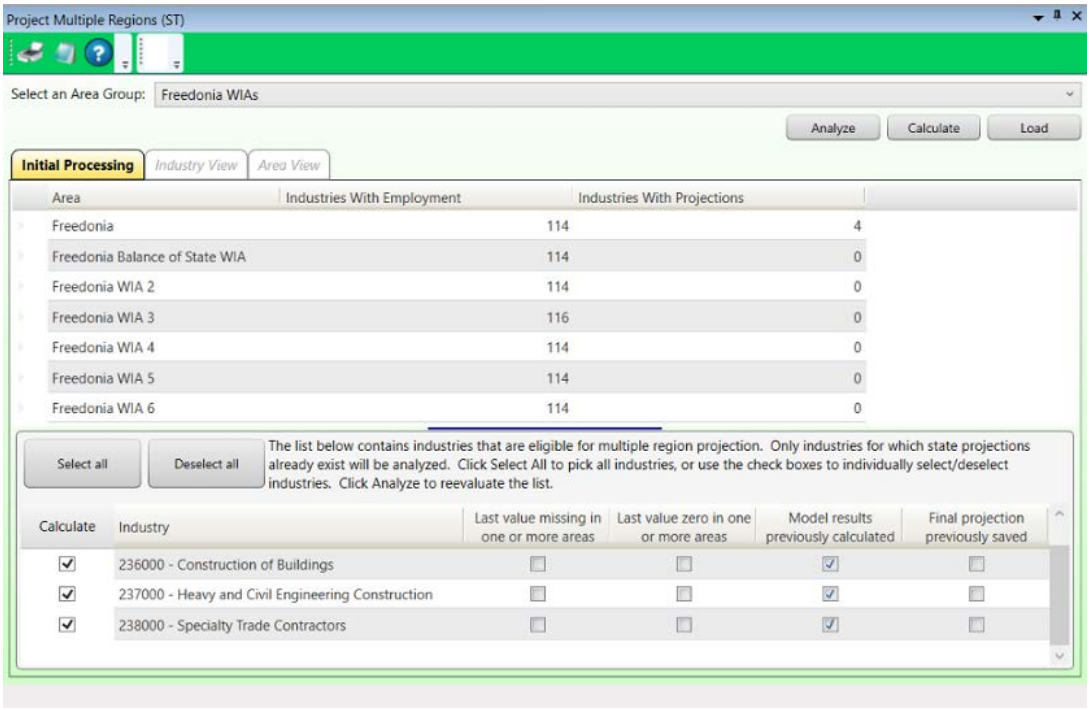


Figure 2: Data for Freedonia WIAs Area Group

The lower portion of the module contains a list of industries projected in the parent industry. The industry is ready to be calculated if the check box next to the **Industry** title is checked. The checked industries are eligible to calculate for sub-state areas.

If the last value is missing in the historical series or the last value is zero in one or more areas, the check boxes under those columns are checked and the industry is unchecked to prevent processing. The errors should be resolved before continuing. If the industry was calculated previously, or saved, the preliminary projections check box or the final projection check box is checked to inform you in case you do not want to overwrite the projected values.

Calculate for Sub-state Areas

1. Click the **Select All** button to select all of the listed industries for projections processing.

2. Click the **Deselect All** button to deselect all of the listed industries for projections processing.

3. Click an empty selection check box next to an industry to select it for projections processing.

4. Click a checked selection box next to an industry to deselect it from projections processing.

5. Once you have made your selections, click the **Calculate** button. You will be prompted to confirm the calculations. Click **Yes** to continue, click **No** to cancel.

6. By selecting **Yes**, projections will be calculated. You will automatically be taken to the **Industry View** tab and the **Area View** tab will become available.

Related Content

- Industry View tab
- Area View tab

Industry View Tab

After calculating the industry information for the selected Area Group, the **Industry View** tab displays.

The calculation process in Project Multiple Regions projects the eight quarterly values for the two-year period for every area and industry and displays them on the list.

Screen Controls

- **Select an Industry** drop-down menu
- **Select a Quarter** data spinner
- **Select data type** control group
  - **Level** radio button
  - **Share** radio button
  - **Growth** radio button
- **Select** control group
  - **Unforced** radio button
  - **Forced** radio button
- **Save Results** control group
  - **Preliminary** button
  - **Final** button

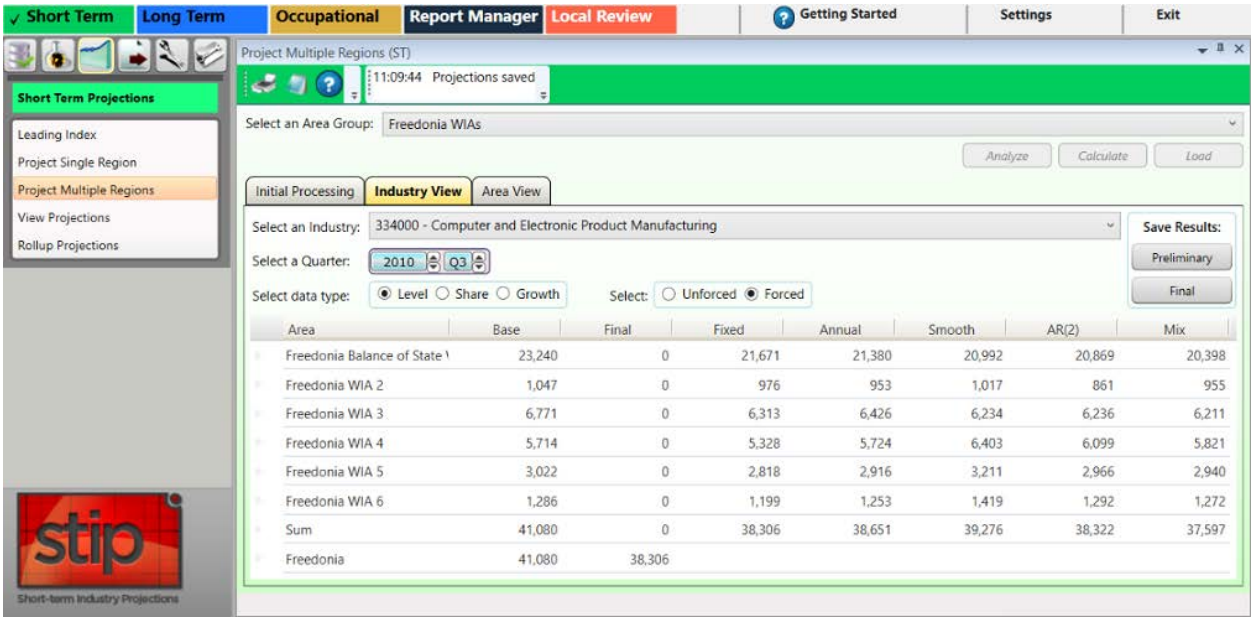


Figure 1: Industry View tab

View Industry Information

1. **Select an Industry** from the drop-down menu.
2. **Select a Quarter** using the date spinner. The projection's final year and quarter are displayed by default.
3. Select the data type you want to view. The options are:
   - Employment **Level** (Level is the only option available for moving and editing values).
   - Percent **Share** for the area. Share converts each area's portion of the sum to a percentage. The shares for each area will sum to 100%.
   - Compound **Growth** rate for the two-year period.
4. Select **Unforced** or **Forced**.
   - **Unforced** is the default from original processing.
   - **Forced** forces the Sum to equal the state or parent total in the Final column. Do not use the **Forced** option until the initial analysis by Level is complete.

Information for five models displays in the Industry View table.

- **Fixed** - values represent the share of state employment found in the listed area. Fixed is based on the last actual employment value for the selected industry. This column compares actual values with projected shares of the other columns of data.
- **Annual** - values represent projected shares of employment for the listed area based on the average share over the last 12 months of data.
- **Smoothing** - values represent projected shares of employment for the listed area based on calculations using the smoothing trend model.
- **AR2** - values represent projected shares of employment for the listed area based on shares calculated using the ARMA 2.0 model.
- **Mix** - values represent the share of state employment for the listed area based on a performance weighted mix model of the three preceding models (annual, smoothing, and AR2).

Enter and Save Final Values

The **Final** column contains values selected by moving the level from the other columns and will be the final saved values for the industry.

1. **Right click** in a model's column. A context menu will be displayed.
2. Select **Move Cell** or **Move Column** from the menu.
   - Selecting **Move Cell** moves only that model's cell value to the **Final** column.
   - Selecting **Move Column** moves all values in that model to the **Final** column.

3. To edit a value in the **Final** column, **double-click** the cell, edit the value, and press **Enter**.

4. In the **Save Results** control group, select a button to save results.

- **Preliminary** - click to save the information for review.
- **Final** - click to save the data after all analysis is complete. Selecting Final saves the projected values for the selected industry across all areas in the group.

The **Sum** and **State** or **Parent Area** (Freedonia, in Figure 1) rows help analyze how close the sum of all the sub-state areas compares to the statewide or parent area. Select the **Forced** view to force the final values to match the total of the parent area, based on their percentage share. When forced, the sum will match the total of the parent area, or very close (because of rounding).

Related Content

- Project Multiple Regions
- Area View

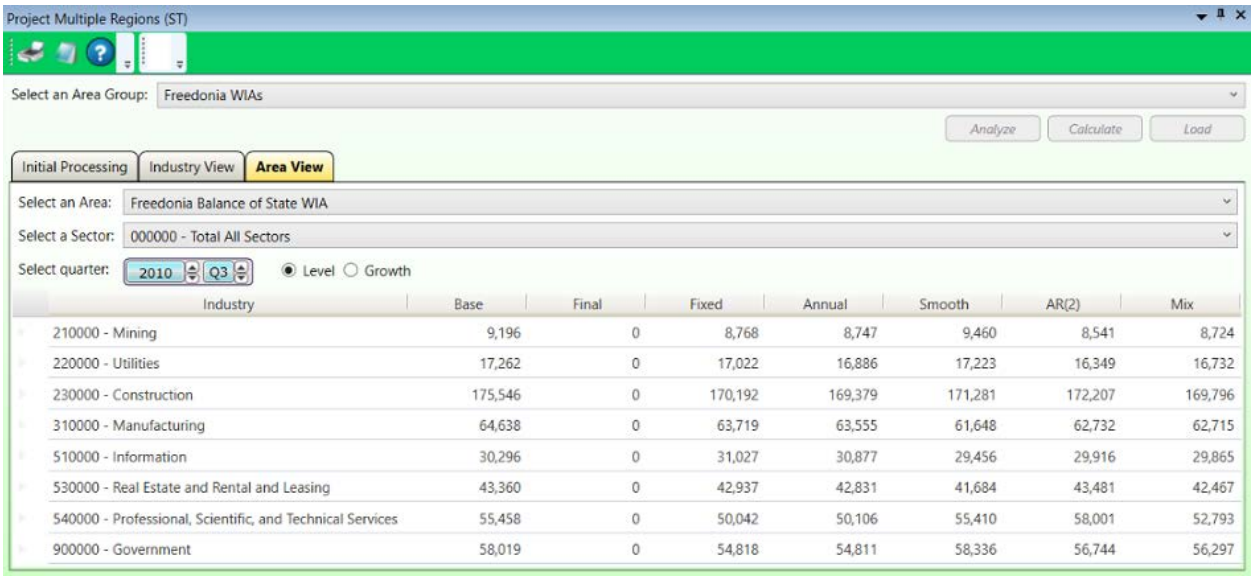
Area View Tab

The **Area View** tab contains projected information for industries within a selected area and sector by quarter. You can view all sectors together by selecting **Total All Sectors**, or you can choose a particular sector which will list the individual industries for that sector.

This is useful to analyze data from an alternative view or for viewing Industries by area and sector. You can also view by **Level** or by **Growth** and change the active quarter. Saving of values in this screen is not possible; its only purpose is analysis.

Screen Controls

- **Select an Area** drop-down menu
- **Select a Sector** drop-down menu
- **Select quarter** date spinner
- **Level** radio button
- **Growth** radio button



Industry	Base	Final	Fixed	Annual	Smooth	AR(2)	Mix
210000 - Mining	9,196	0	8,768	8,747	9,460	8,541	8,724
220000 - Utilities	17,262	0	17,022	16,886	17,223	16,349	16,732
230000 - Construction	175,546	0	170,192	169,379	171,281	172,207	169,796
310000 - Manufacturing	64,638	0	63,719	63,555	61,648	62,732	62,715
510000 - Information	30,296	0	31,027	30,877	29,456	29,916	29,865
530000 - Real Estate and Rental and Leasing	43,360	0	42,937	42,831	41,684	43,481	42,467
540000 - Professional, Scientific, and Technical Services	55,458	0	50,042	50,106	55,410	58,001	52,793
900000 - Government	58,019	0	54,818	54,811	58,336	56,744	56,297

Figure 1: Area View tab

View Projected Information

1. **Select an Area** from the drop-down menu.
2. **Select a Sector** from the drop-down menu. Select **Total All Sectors** to view all sectors together.

3. Select a time frame with the **Select quarter** date spinner.

4. Click the desired **Level** or **Growth** radio button. With each choice, the data updates to reflect the criteria.

- Employment **Level**
- Compound **Growth** rate for the two-year period

Related Content

- Project Multiple Regions
- Industry View

View Projections

The **View Projections** module allows viewing of completed industry projections for the selected area and industry. The purpose of this module is to create a graphical representation of the historical industry series along with the final projected values (which are quarterly values). Once the projections are complete, this module helps you to analyze the projections and allows you to print reports for selected industries.

Screen Controls

- **Select Area** drop-down menu
- **Select Industry** drop-down menu
- **Level** radio button
- **% Growth** radio button
- **Display date** spinner
    - o **Max** button

Figure 1: View Projections module

View Projections

1. **Select an area** from the drop-down menu.
2. **Select an industry**.
3. Click either the **Level** or the **% Growth** radio button. The Annual Average Projected Growth displays next to the radio buttons.

4. Select a time frame using the **Display date** spinners. Entering time values focuses the graph on the selected date range to evaluate the data points. An alternative way to zoom in on graph values is to select chart dates with the mouse.

- Click the **Max** button to view the maximum possible time frame.

The graph will display the historical series (represented by the blue line), as well as the projected values (represented by the red line). The data grid will display the quarterly values for both the historical and projected values. Only the last (latest) projected value is able to be edited. The value can only be edited while the **Level** radio button is selected.

Scrolling the grid activates a data popup. The popup (see Figure 2) will display a specific month and year. When the desired date displays, release the mouse button and the selected data will appear at the top of the grid. Alternatively, you can click on a value in the grid and move up and down with the keyboard's arrow keys.

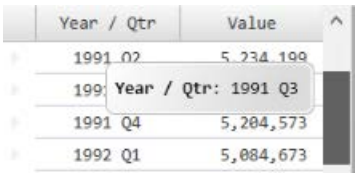


Figure 2: Date pop-up

If the historical series is not present, only the projected values will display.

Export a Report

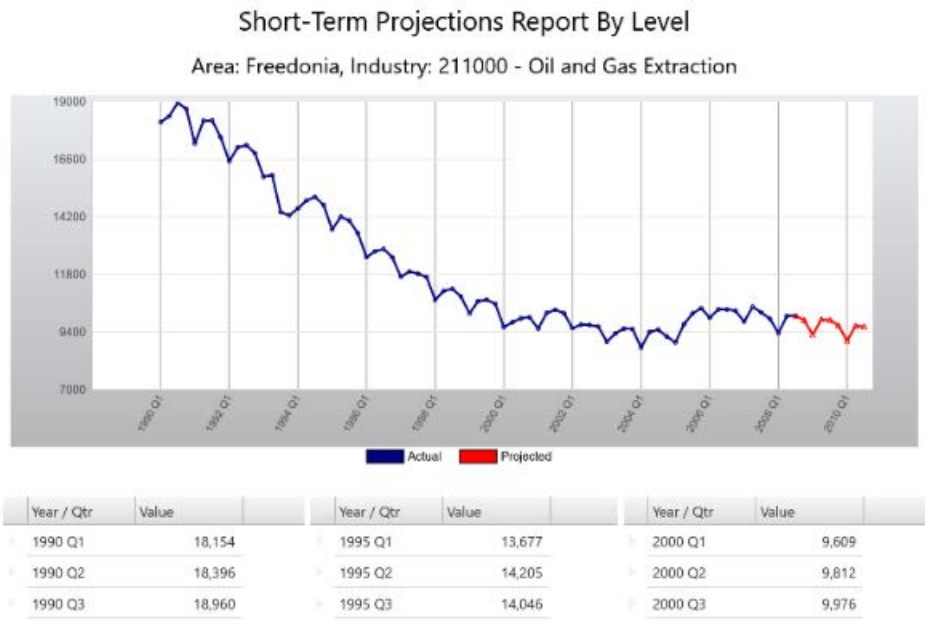
After processing, you can use the **Export** icon on the Active Module Toolbar to export a report. A View Projections Export window will be displayed with the following options:

- Export Selected Industry
- Export Industries in Sector
- Export All Industries

Make your selection by clicking the associated radio button, then click **OK**. Select a location and name for the file, then click **Save**.

Print a Report

1. Click the **Print** icon to generate a report for the selected industry and open the Print Preview window:



Year / Qtr	Value
1990 Q1	18,154
1990 Q2	18,396
1990 Q3	18,960

Year / Qtr	Value
1995 Q1	13,677
1995 Q2	14,205
1995 Q3	14,046

Year / Qtr	Value
2000 Q1	9,609
2000 Q2	9,812
2000 Q3	9,976

Figure 3: Short-Term Projections Report by Level

2. Click the **Print** button in the Print Preview window to print the report.

Rollup Projections

The **Rollup Projections** module enables consolidation of all children of the selected parent industry. This creates sector and total area projections based on detailed industry projections.

To rollup projections by sector, and therefore total, all detailed industries in each sector should be completed for the area. If they are not completed, sector projected values and total values may not sum to the values expected when viewing projections or reviewing final reports.

Use the Rollup Selected Sector option to consolidate the sectors selected to their parent industry. Use the Rollup Historical Series option to add historical data to a sector. Rolling up the historical series ensures that a sector which may not contain data will have the historical series data, in addition to the projected data. It is not required to add the historical series to the sectors. However, it does help when viewing projections for the sectors.

Screen Controls

- **Select an Area** drop-down menu
- **Select a Sector** drop-down menu
- **Rollup All Sectors** button
- **Rollup Selected Sector** button
- **Rollup Historical Series** check box

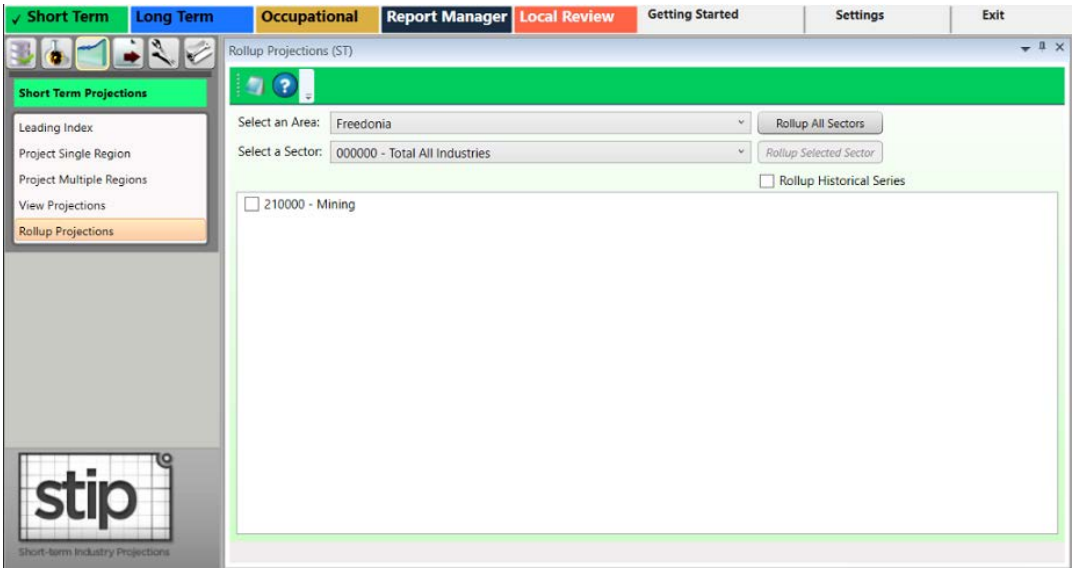


Figure 1: Rollup Projections module

Rollup an Industry

1. **Select an Area** from the drop-down menu.
2. **Select a Sector**. The industries to be included in the rollup are displayed.

☞The Rollup Selected Sector button will be unavailable if projections are not complete for the more detailed industries under it.

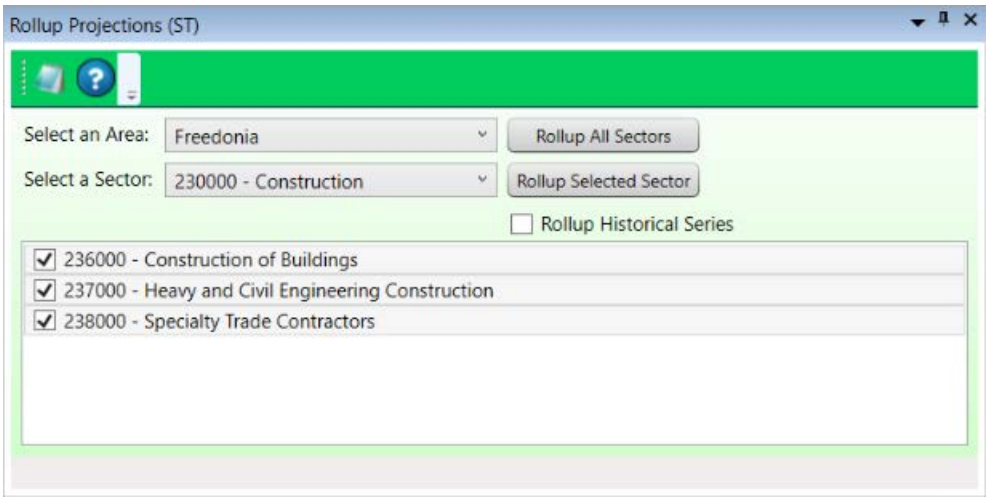


Figure 2: Industries 236000, 237000, and 238000 will be rolled-up to the parent sector, 230000

3. Click the **Rollup Selected Sector** button. A dialog box will be displayed.
4. Click **Yes** to overwrite, click **No** to cancel the rollup.

Rollup All Sectors

The **Rollup All Sectors** button allows the consolidating of all sectors for the selected area into their parent industry.

1. Click the **Rollup All Sectors** button. A dialog box will be displayed.

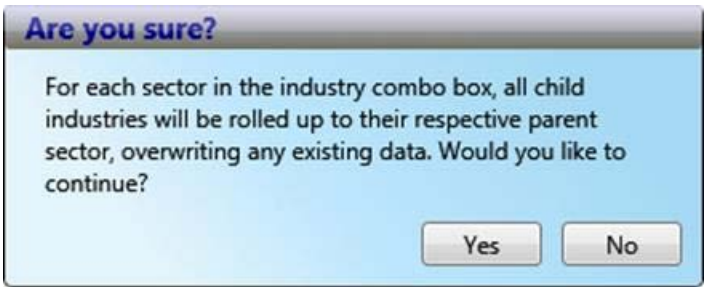


Figure 3: Confirmation dialog box

2. Click the **Yes** button. After completing the rollup, the **Rollup Projections** module will be displayed again.

Rollup Historical Series Check Box

The **Rollup Historical Series** check box performs an aggregation (that overwrites any existing historical series). Rolling up the historical series ensures a sector, which may not contain that data will have that data in addition to the projected data. Otherwise, the sector may contain only projected data. To **Rollup Historical Series** for a **Sector**:

1. Click the **Rollup Historical Series** check box.
2. Click either the **Rollup All Sectors** button or the **Rollup Selected Sector** button, depending on the data being rolled up. Clicking the **Rollup All Sectors** button displays a confirmation dialog box.
3. Click **Yes** to continue the rollup. Click **No** to stop the rollup. After selecting **Yes** to **Rollup All Sectors**, or after clicking the **Rollup Selected Sector** button, the **Rollup complete** dialog box will be displayed.
4. Click **OK**.

Short Term Output Menu Items

Short Term Output Introduction

The menu items in the **Short Term Output** group menu allow creation of reports or exporting of data from the Short Term Projections application.

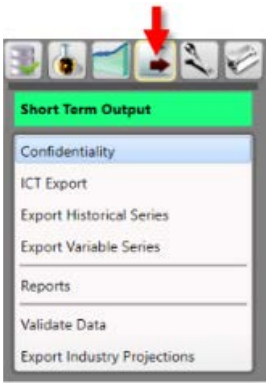


Figure 1: Short Term Output group menu

The Short Term Output group menu contains the following selections:

- Confidentiality
- ICT Export
- Export Historical Series
- Export Variable Series
- Reports
- Validate Data
- Export Industry Projections

Confidentiality

Use the **Confidentiality** module to flag industries as confidential. This helps prevent releasing industry data to the public where data could potentially identify employers or their information.

The Confidentiality module is available in Short Term and Long Term Projections. Occupational Projections also has a Confidentiality module, but uses different settings.

Screen Controls

- **Select an Area** drop-down menu
- **Confidential** check boxes

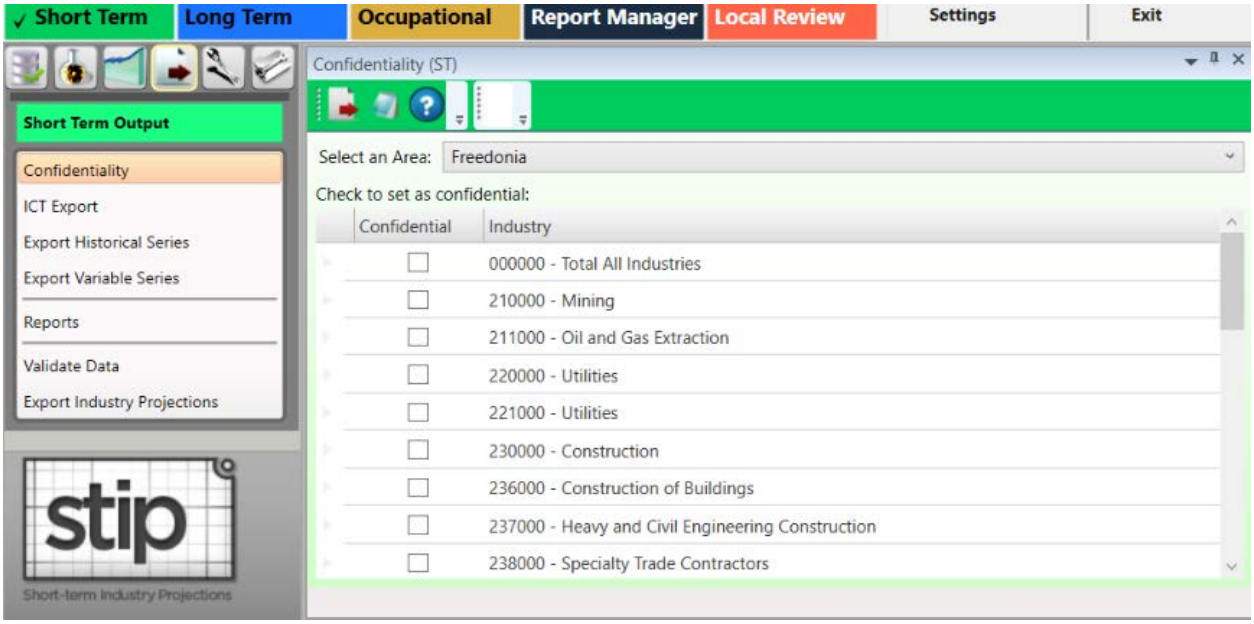


Figure 1: Confidentiality module

Mark an Industry as Confidential

1. **Select an Area** from the drop-down menu. The industries with completed projections within the selected area will display.

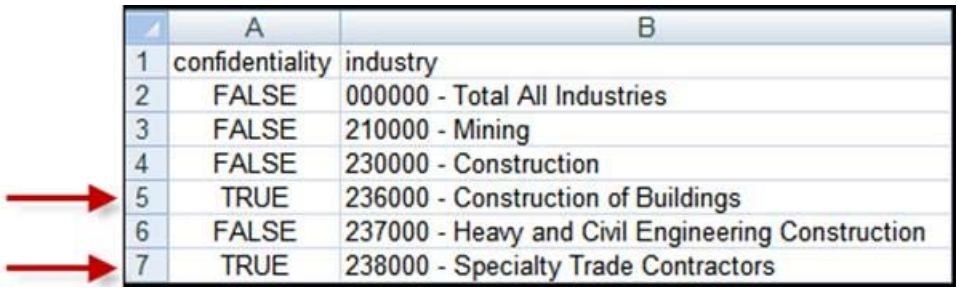
2. Check the confidentiality box next to each industry you want to identify as confidential. Or, right click the check box or the industry and select the **Toggle Confidentiality** button. Clicking the Toggle Confidentiality button will change the current setting to the opposite setting.

☞All industries with selected check boxes are treated as confidential. The Industry Projections software does not directly deal with confidentiality, but the checked industry flags carry forward into the ICT records in the Occupational Projections and Report Manager applications.

Create a Report of Confidential Industries

1. Click the **Export** button from the Active Module Toolbar. A **Save As** dialog box will be displayed.
2. Select a save location and type a name for the report.
3. Click **Save**.

The data exports into an Excel spreadsheet. The spreadsheet will contain the list of industries and display whether or not they're confidential.



	A	B
1	confidentiality	industry
2	FALSE	000000 - Total All Industries
3	FALSE	210000 - Mining
4	FALSE	230000 - Construction
5	TRUE	236000 - Construction of Buildings
6	FALSE	237000 - Heavy and Civil Engineering Construction
7	TRUE	238000 - Specialty Trade Contractors

Figure 2: Exported confidentiality report

Alternatively, click the **Print** button in the Active Module Toolbar to print a report of industries and their confidentiality.

ICT Export

Use the **Industry Control Total (ICT) Export** module to export projected industries to the internal ICT table for use in the Occupational Projections application or to a file for use in other applications or reports.

The values exported to the spreadsheet and to the ICT file are the last actual quarterly employment value and the last quarterly projected value for each industry.

A Base Year is determined from the year of the last quarter, and the Projected Year is determined from the year of the last projected quarter. In Short Term Industry Projections, the Short Term Round setting determines these quarters. The same base year, or the same projected year value, is the value for all date quarters during the year. The only industries exported to the ICT table or to the spreadsheet file are the industries on the list. If the Selected Industries list needs modification, modify the list and export the industries again. Previously saved ICT projections for the area change to the new listed industries.

Screen Controls

- **Select an Area** drop-down menu
- **Transfer ICT data to Occupational Projections** check box
- **Available Industries** table
- **Selected Industries** table
- **Move** buttons

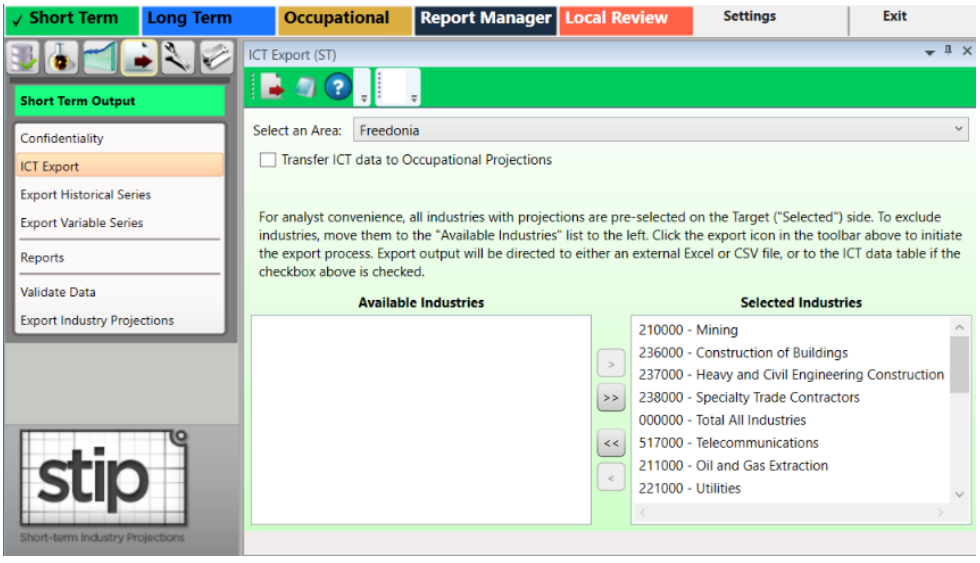


Figure 1: ICT Export module

Utilize ICT Export

1. **Select an Area** and a list of industries with projections will be displayed in the **Selected Industries** table. Industries that *should not* be exported should be moved to the **Available Industries** table. However, exporting all of the industries is usually typical.

2. To move industries into the **Available Industries** table (and exclude them from exportation), select an industry and click the **Move left**  button.

- Manipulate the additional **move** and **move all** buttons to move industries from the Selected Industries table to the Available Industries table, and vice versa.
- **Right-clicking** any industry opens a context menu which allows you to **Remove** or **Add Selected** (depending on which table you've right-clicked into), **Select All**, or **Unselect All** industries.

☞Multiple industries can be moved at a time. For help with selecting multiple industries, click here.

Export Data to Occupational Projections

1. To transfer ICT data to the Occupational Projections application, check the **Transfer ICT data to Occupational Projections** box prior to exporting the data.

2. When the list of selected industries is ready, click the **Export** button on the Active Module Toolbar.

3. A **Finished** message will display, letting you know the ICT data from the Selected Industry table was exported to the ICT table in Occupational Projections. Click **OK**.

Export Data to a Spreadsheet

1. Ensure the **Transfer ICT data to Occupational Projection** box is unchecked.
2. Click the **Export** button. A **Save As** window will display.
2. Select a location and type the name of the file to be exported.
3. Click **Save**.

Related Content

- Edit ICT
- Manage Rounds

Export Historical Series

Use the **Export Historical Series** module to export industry historical data to a spreadsheet file.

Screen Controls

- **Select an Area** drop-down menu
- **Select a date range** spinners
  - **Max** button
- **Move** buttons
- **Available Industries** table
- **Selected Industries** table

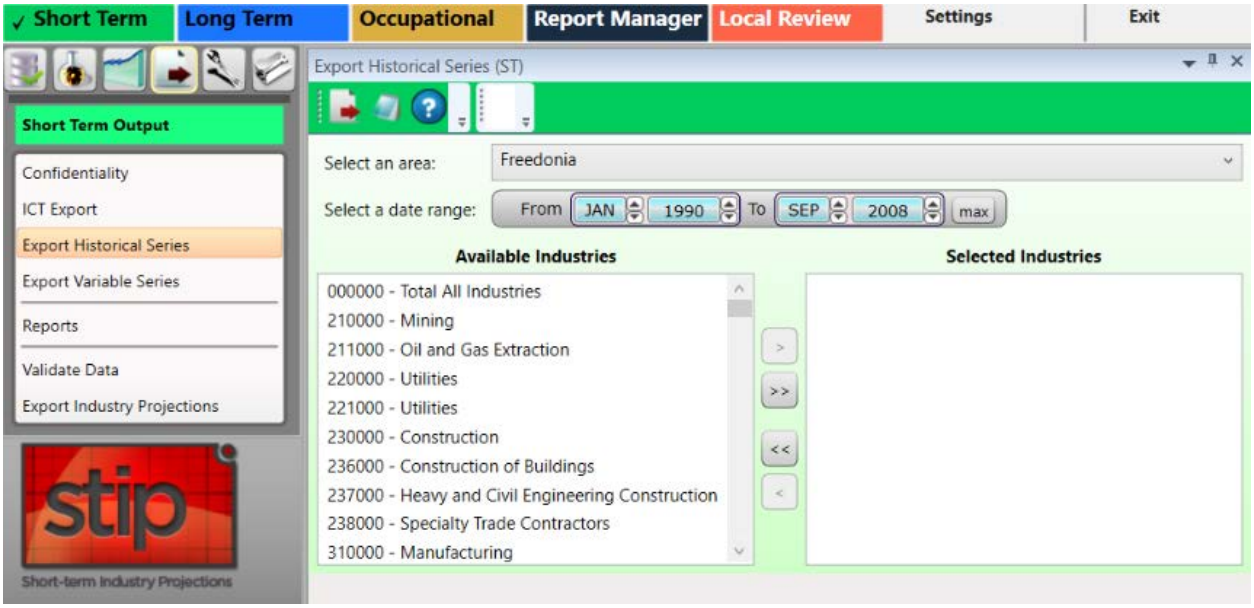


Figure 1: The Export Historical Series module

Export Historical Data

1. **Select an Area** from the drop-down menu.
2. **Select a date range** using the spinners.
3. Select industries from the Available Industries table to export their historical time series data. Multiple industries can be moved at a time. For help with selecting multiple items, click here.
4. Click the **Add** > button. The selected industries will be moved into the **Selected Industries** table.

- Use the additional move and move all buttons to move industries from the Available Industries table to the Selected Industries table, and vice versa.
- Right-clicking any industry opens a context menu which allows you to **Remove** or **Add Selected** (depending on which table you've right-clicked into), **Select All**, or **Unselect All** industries.

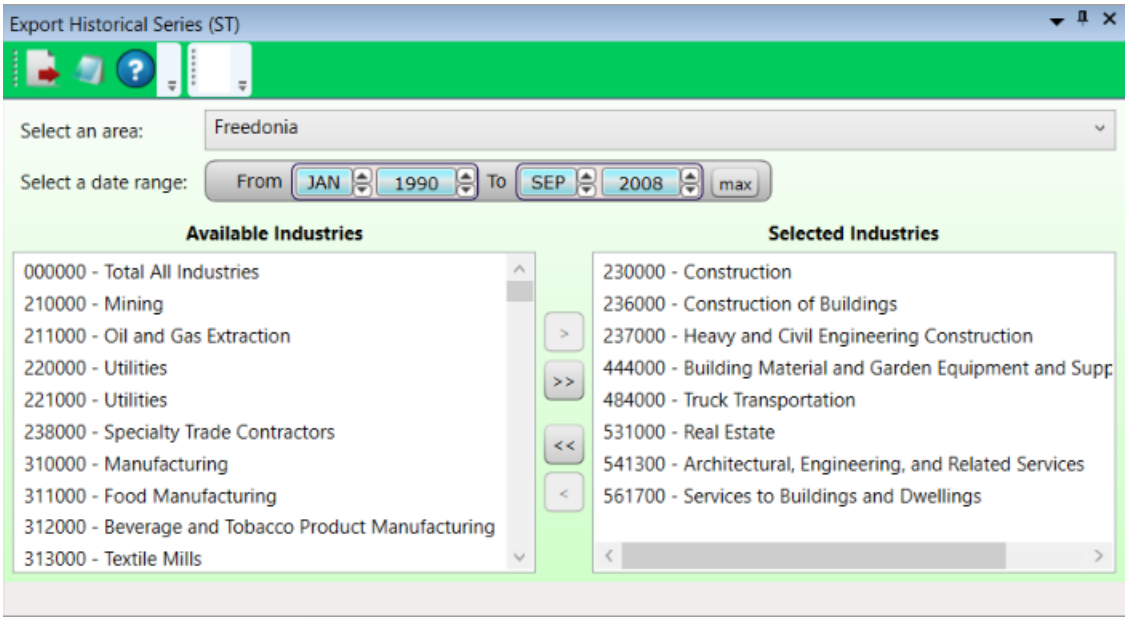


Figure 2: The selected industries are moved into the Selected Industries table and are ready for export

5. When the list of selected industries is ready, click the **Export** button on the Active Module Toolbar. A **Save As** window will be displayed.
6. Select a location and type the name of the file to be exported.
7. Click the **Save** button.

Export Variable Series

Use the **Export Variable Series** module to export historical variable data. This module creates importable spreadsheets containing variable time series data. Variable data from only one variable type (National, State, or Regional) can be exported at a time in the Short Term application.

Screen Controls

- **Select a Variable Type** drop-down menu
- **Select a date range** spinner
  - **Max** button
- **Available Variables** table
- **Selected Variables** table
- **Move** buttons

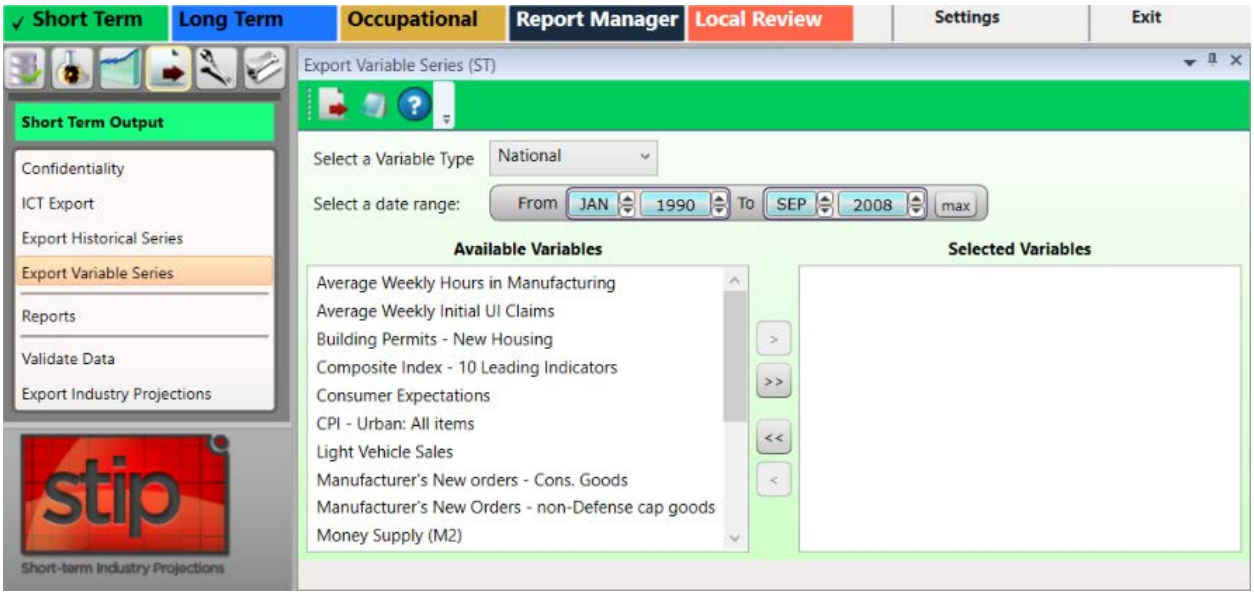


Figure 1: Export Variable Series module

Export Variable Data

1. **Select a Variable Type** from the drop-down menu.
2. **Select a date range** using the spinner controls.
3. Select variables from the **Available Variables** table and click the **Move** button. The variable will be moved to the **Selected Variables** table.

- Use the additional move and move all buttons to move variables from the Available Variables table to the Selected Variables table, and vice versa.
- Right-clicking any variable opens a context menu which allows you to **Remove** or **Add Selected** (depending on which table you've right-clicked into), **Select All**, or **Unselect All** variables.

4. Click the **Export** button on the Active Module Toolbar. A **Save As** dialog box will be displayed.
5. Enter a file name and select the destination to save the file.
6. Click **Save**.

Related Content

- Variable Directory
- Review Variables

Reports

Use the **Reports** module to export projected industry employment data to a spreadsheet, preview projections in a report format, or print the report.

Screen Controls

- **Select an Area** drop-down menu
- **Select a report** drop-down menu
- **View by Date** check box/spinner

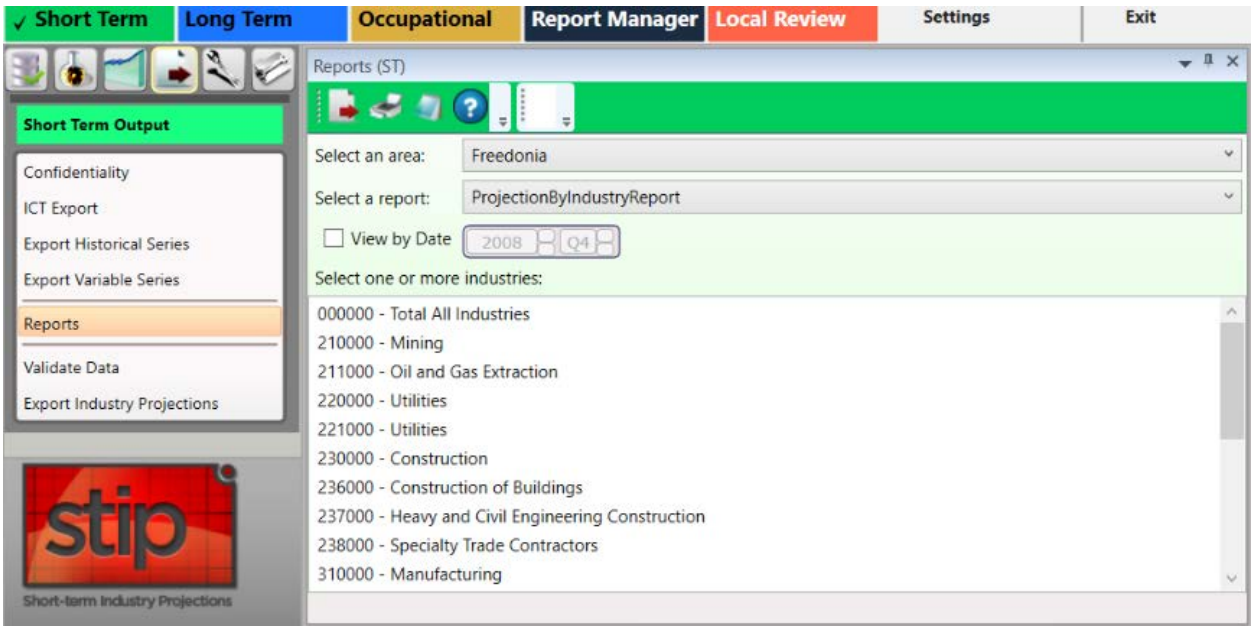


Figure 1: Reports module

Create and Export a Report

1. **Select an area** from the drop-down menu. The drop-down is populated with areas that contain projections.

2. **Select a report** from the drop-down menu. Reports contain eight quarters of projected data for each selected industry. Choices are:

   - Projection By Industry
   - Projection By Industry With Growth
   - Quarterly Historical and Projections By Industry
   - Quarterly Projected and Non Projected Industries

3. Click the **View by date** check box and manipulate the date spinner to select a specific quarter for the report.

4. **Select one or more industries** from the table. For assistance with selecting multiple industries, click here.

5. Click the **Export** button on the Active Module Toolbar. A **Save As** window will display.

6. Create a name and select a location for the file to be exported.

7. Click **Save**.

Print a Report

1. Select one or more industries to include in the report.

2. Click the **Print** icon on the Active Module Toolbar. The Print Preview window will display the generated report:

Projection By Industry Report

Area: Freedonia

	Industry	Year / Quarter	Projected Employment Level
210000	Mining	2008 Q4	9,900
		2009 Q1	9,288
		2009 Q2	9,922
		2009 Q3	9,901
		2009 Q4	9,674
		2010 Q1	9,042
		2010 Q2	9,660
		2010 Q3	9,626
211000	Oil and Gas Extraction	2008 Q4	9,900
		2009 Q1	9,288
		2009 Q2	9,922
		2009 Q3	9,901
		2009 Q4	9,674
		2010 Q1	9,042
		2010 Q2	9,660
		2010 Q3	9,626

Figure 2: Projection by Industry Report

3. Click the **Print** button in the Print Preview window to send the report to the printer.

Validate Data

Use the **Validate Data** module to validate and extract reports on the disposition of your data.

The Validate Data module is available in both Short Term and Long Term applications. The Short Term application validates monthly data. The Long Term Validate Data module allows you to validate annual data, and data for the entire United States.

Screen Controls

- **Select an Area** drop-down menu
- **Filter** drop-down menu
- **Validate** button

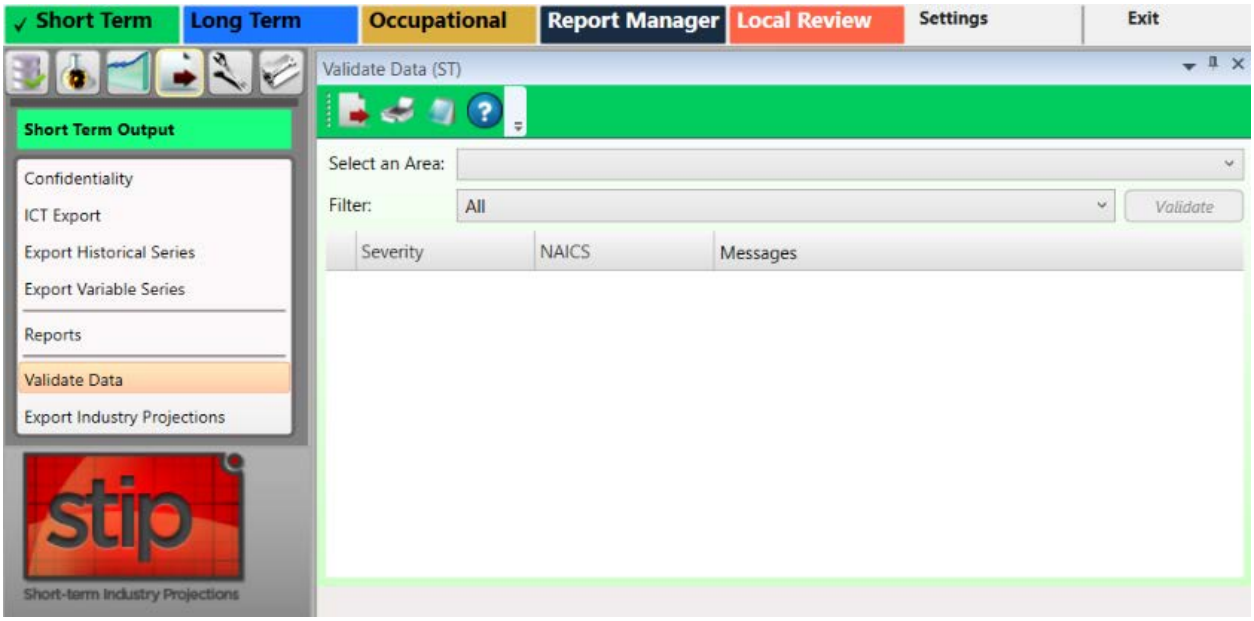


Figure 1: Validate Data module

Validate the Data

1. **Select an Area**.
2. Click the **Validate** button. The validation data errors will be displayed for All filters.

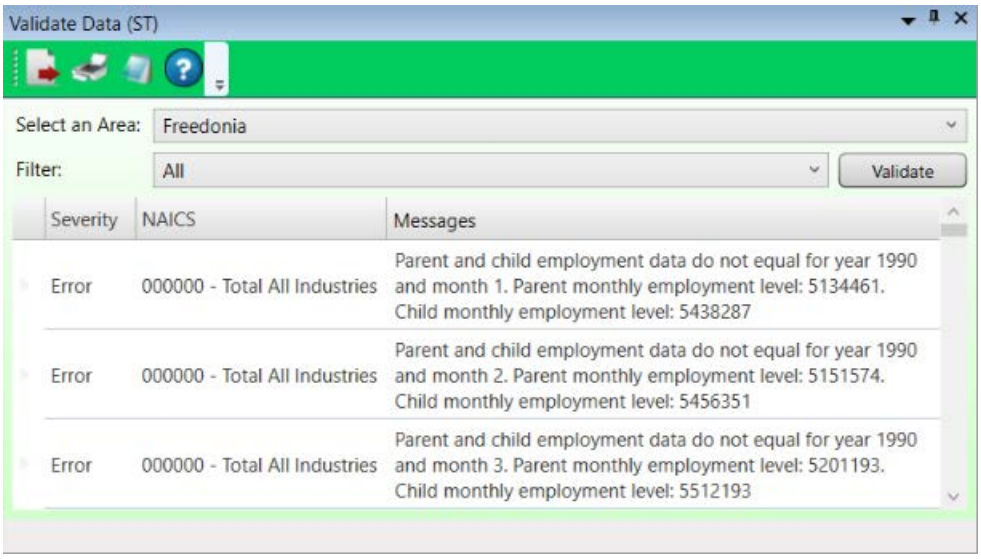


Figure 2: Non-valid data for Freedonia

3. Select a **Filter** from the drop-down menu. Filter options are:

- All
- Industry has Monthly Employment Data
- Sum of Child Monthly Employment Equals Parent
- Industry projection Equals Child Projections
- Check for Missing Employment Data

After processing, you can the **Export** or **Print** options on the Active Module Toolbar to export or print the report. Use the **Notebook** to add any needed information.

Export Industry Projections

The **Export Industry Projections** module allows the exporting of a specific area's industry projections to a spreadsheet file or directly into Report Manager.

The Export Industry Projections module is available in the Short Term and Long Term Projections applications.

Screen Controls

- **Export Data to File - Local Review Format** radio button
- **Export Data to File - Projections Review** radio button
- **Transfer Data to Report Manager** radio button
    - **Source Timeframe** drop-down menu
- **Source Area(s)** drop-down menu

Figure 1: Export Industry Projections module

Export Industry Projections

1. Select a **Source Area(s)** from the drop-down menu.
2. Select one of the three radio buttons, depending on the type of export required.

    1. Select the **Export Data to File - Local Review Format** or **Export Data to File - Projections Review** radio button.

2. Click the **Export** button on the Active Module Toolbar. A **Save As** dialog box will be displayed.
3. Enter a file name and select a location to save the file to.
4. Click **Save**.

Or

1. Select the **Transfer Data to Report Manager** radio button.
2. Select the **Source Area(s)** and **Source Timeframe** from the drop-down menus.
3. Click the **Export** button on the Active Module Toolbar.
4. Use the Browse Data menu selection in Report Manager to view the data.

Short Term Compare Menu Items

Short Term Compare Introduction

Use the **Short Term Compare** group menu to configure an Upload Area account, upload data, and create a geographical comparison.

Figure 1: Short Term Compare group menu

The Short Term Compare group menu contains the following selections:

- Upload Area Connection
- Upload
- Short Term Geographic Comparison

Upload Area Connection

Use the **Upload Area Connection** module to configure an Upload Area account. Contact the Utah Projections Help Desk for help with setting up an Upload Area account. There should be only one registered analyst per state.

This module is available in the Short Term, Long Term, and Occupational Projections applications.

Screen Controls

- **Service URL** field
- **Email** field
- **Password** field
- **Connect** button

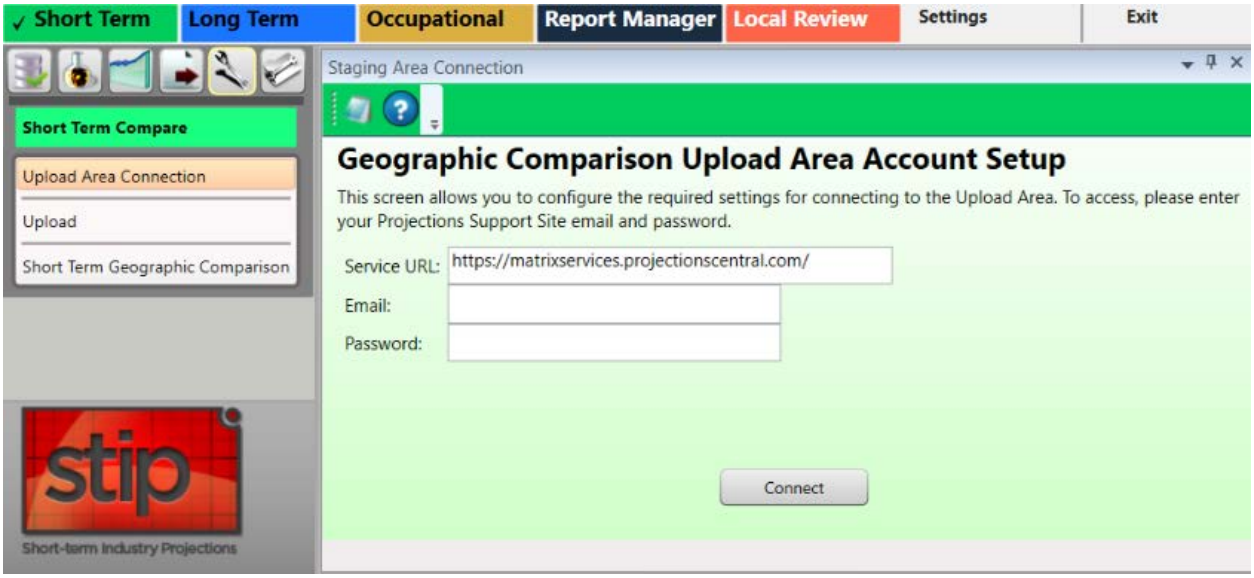


Figure 1: Upload Area Connection module

Login to Geographic Comparison Upload Area Account

1. Enter your **Projections Support Site email address** in the **Email** field.
2. Enter your **Projections Support Site password** in the **Password** field.
3. Click **Connect**. A Finished dialog box will be displayed if the connection is successful.
4. Click **OK** to return to the **Upload Area Connection** module.

☞If the connection is unsuccessful, the following message will be displayed:

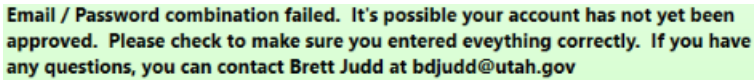


Figure 2: Connection failure dialog

5. Check your email address and password combination and try again. If multiple failures occur, contact the Utah Projections Help Desk for assistance.

Related Content

- Validation
- State Self Publish

Upload

Use the **Upload** module to select the source for your industry comparison. This module is available in the Short Term and Long Term applications.

Screen Controls

- **Projection Suite Data** radio button
  - **State** drop-down menu
  - **Export To Upload Area** radio button
  - **Export To File** radio button
  - **File** field
  - **...** button
- **Import File** radio button
  - **Select file to import** field
  - **Browse** button
  - **Detected File Type** field
  - **Import** button

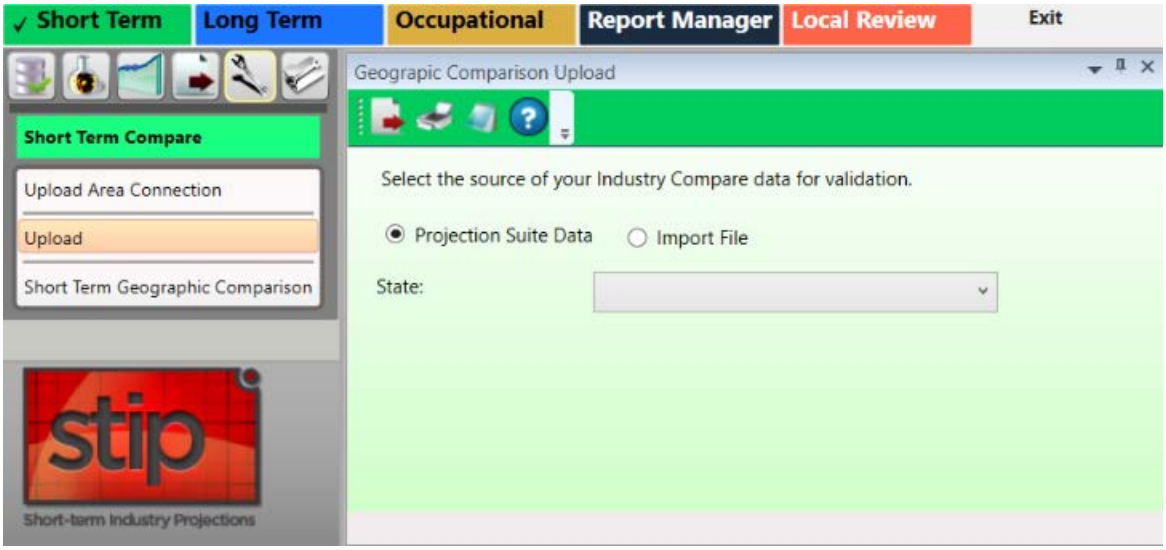


Figure 1: Upload module

Upload Industry Compare Data for Validation

1. Select the source.
   1. Select **Projection Suite Data**.
   2. Select a **State**. The data process and a validation dialog displays.
   3. Select **Export To Upload Area** or **Export To File**. Export To Upload Area is not available if the validation fails.

4. If you selected **Export To Upload Area**, click **Send Compare Data**. A **Successfully Submitted all Projections** message displays.

5. Click **OK**.

Or

1. If you selected **Export To File**, select a **File** by clicking the **...** button. A Save As dialog will be displayed.

2. Select a name and location for the file, then click **Save**.

3. Then, on the Active Module Toolbar, click **Export**.

4. Click **Save**.

Or

1. Select **Import File**.

2. Click **Browse** and select a file to import.

3. Click **Import**.

4. Select **Export To Upload Area** or **Export To File**. Export To Upload Area is not available if the validation fails.

5. If you selected **Export To Upload Area**, click **Send Compare Data**. A **Successfully Submitted all Projections** message displays.

6. Click **OK**.

Short Term Geographic Comparison

Use the **Short Term Geographic Comparison** module to create comparisons. You can create comparisons for:

- Compare to States
- Region Compare
- Workforce Compare
- Services Compare
- Goods Compare

Data is stored in the Upload Area for all states which have submitted data. Short Term Geographic Comparison requires data from at least three states.

The Short Term Geographic Comparison module is available in the Short Term and Occupational Projections applications. It is important to make the distinction: the Short Term Geographic Comparison module compares *industry* data; the Short Term Geographic Comparison module in the Occupational Compare group menu utilizes *occupational* data.

> ☞If you do not have an Upload Area account, an error message displays. You are unable to make comparisons until you have the account set up. Reference the Upload Area Connection module for information on creating an account.

Screen Controls

- **Select the base state** drop-down menu
- **Geographic Comparison** button
- **Compare to States** radio button
  - **Available States** table
  - **Selected States** table
- **Region Compare** radio button
- **Workforce Compare** radio button
- **Services Compare** radio button
- **Goods Compare** radio button
- **Available States** screen
- **Selected States** screen
- **Move** buttons

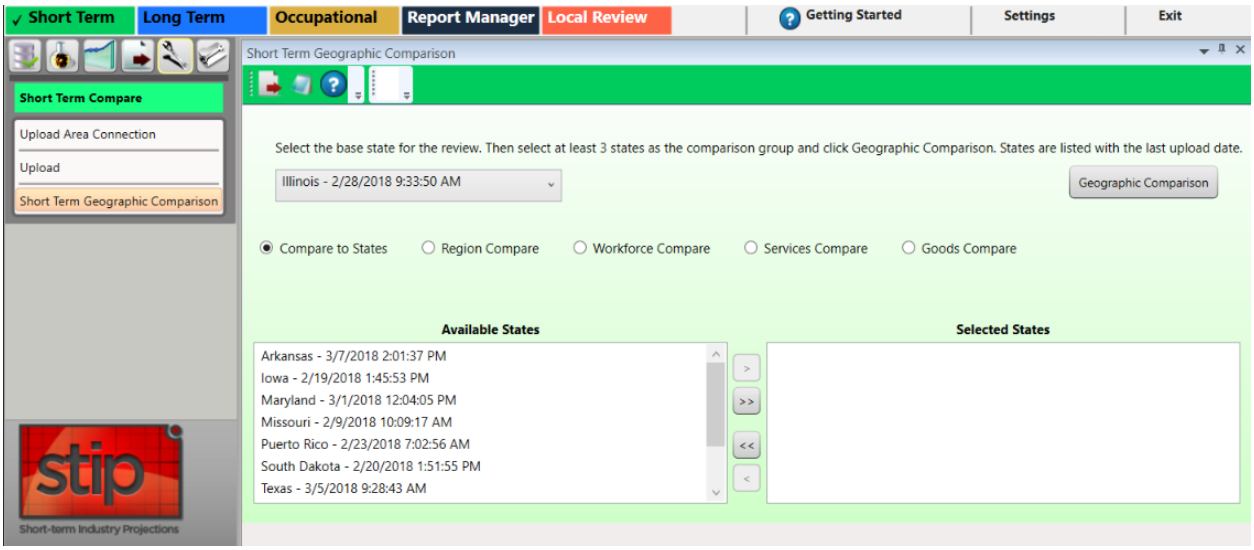


Figure 1: Short Term Geographic Comparison module

To generate comparisons from the Short Term Geographic Comparison module, select the type of comparison using the radio buttons. Submitted data includes the state name and submittal date and time. The date and time is used to ensure the compared data is the latest, most updated data.

Compare to States

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.
2. Select the states from the **Available States** box and move them to the **Selected States** box. Click the state, then click the arrow button. Or, click the double arrow button to move all **Available States** to the **Selected States** box.
3. Click **Geographic Comparison**. When the comparison is complete, a message displays.
4. Click **OK**.
5. Click the **Export** icon in the Active Module Toolbar.
6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Region Compare

1. Select the base State. The base state defaults to your state. You can select any state from the list as the base state for the comparison.
2. **Select the Region for the comparison**.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.

5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Workforce Compare

1. Select the base State.

2. **Select the Workforce Quartile for the comparison**.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.

5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Service Compare

1. Select the base State.

2. **Select the Services Quartile for the comparison**.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.

5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Goods Compare

1. Select the base State.

2. **Select the Goods Quartile for the comparison**.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.

5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Related Content

- Geographic Comparison File Format

Short Term Utilities Menu Items

Short Term Utilities Introduction

The menu items for **Short Term Utilities** group menu allow a variety of maintenance and administrative functions within Short Term Projections.

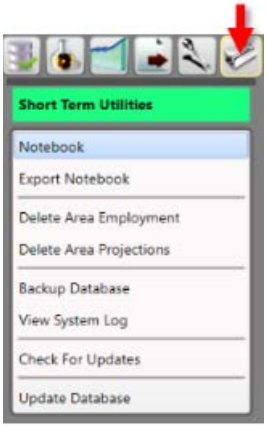


Figure 1: Short Term Utilities group menu

The Short Term Utilities group menu contains the following selections:

- Notebook
- Export Notebook
- Delete Area Employment
- Delete Area Projections
- Backup Database
- View System Log
- Check for Updates
- Update Database

Notebook

Use the **Notebook** module to record user and statistical notes and attach them to areas and industries. The Notebook can be helpful during the analysis and projections process. It can also be used to keep historical records for industries, which can be helpful when state analysts leave and new analysts begin using the application. You can access the Notebook in all but a few Short Term Industry and Occupational Projections modules.

Screen Controls

- **Area** drop-down menu
- **Industry** drop-down menu
- **Save** button
- **Reload** button
- **Delete All Notes** button

Record or Modify Notes

1. Click the **Notebook** module from the group menu. The **Notebook screen** will be displayed in its own undocked window:

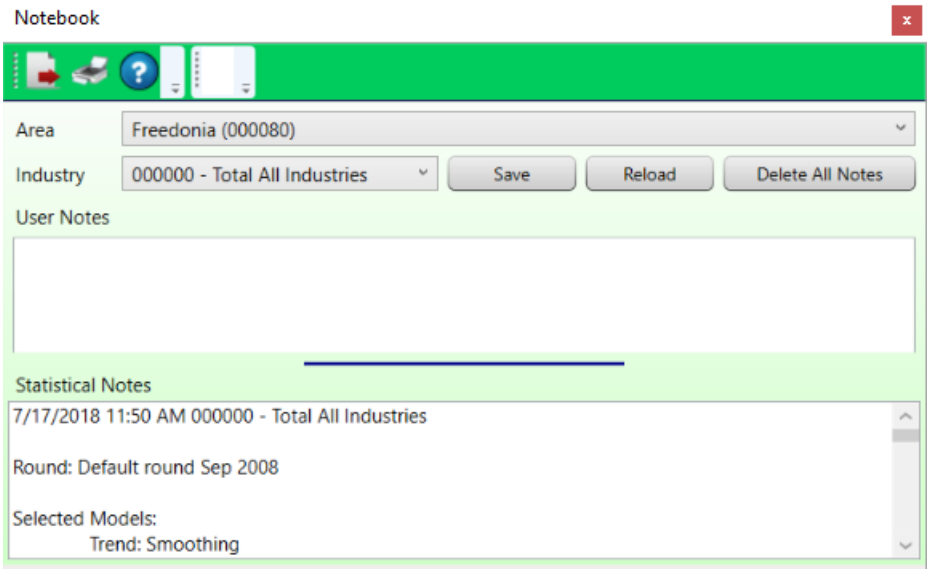


Figure 1: Notebook module

2. Select an area to record/modify notes about, with the **Area** drop-down menu.

3. Select an industry to record/modify notes for, by clicking the **Industry** drop-down menu.
4. **Type the notes** for the selected area and time frame.
5. Click the **Save** button.

Export Notes

1. Click the **Export** button in the Active Module Toolbar. A **Save As** dialog box will be displayed.
2. Select a name and location for the notebook file to be exported to.
3. Click the **Save** button.

Printing the Notes

1. Click the **Print**  button in the Active Module Toolbar. The **Print Preview dialog box** will be displayed. The **Print Preview dialog box** contains seven icons to assist with the printing/confirmation process. From left to right, they are the:

- **Print**  icon used to send the notebook to the printer.
- **Zoom In**  and **Zoom Out**  icons are used to make the text larger and smaller.
- **View at 100%**  icon used to view the Notebook at 100% of its size.
- **View at Page Width**  icon used to view the notebook so it fills the width of the page.
- **View Whole Page**  icon used to view the entire Notebook page.
- **View Two Pages**  icon used to view two pages of the Notebook at the same time.

2. Click the **Print**  icon after making all of the needed entries and adjustments. The Notebook data will print.

Export Notebook

The **Export Notebook** module enables exportation of notebook data to a text file for a selected area/industry or all areas and industries.

Screen Controls

- **All Notes for an Area** check box
- **Area** drop-down menu
- **All Notes for an Industry** check box
- **Industry** drop-down menu
- **All** check box

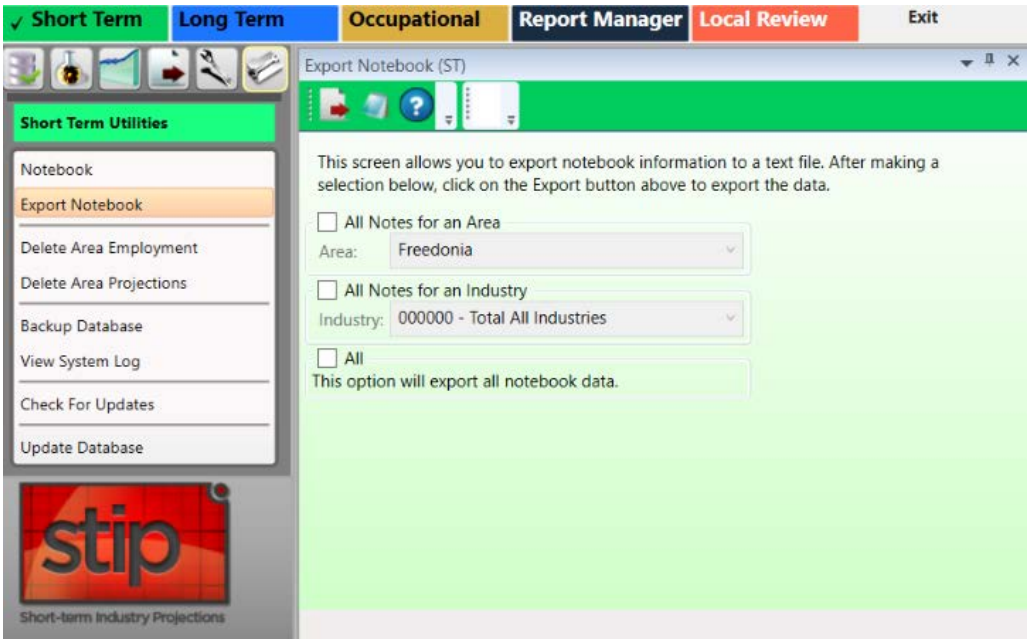


Figure 1: Export Notebook module

Export Notebook Data

1. Select one of the following:

   - **All Notes for an Area** check box, then select the **Area** from the drop-down menu.
   - **All Notes for an Industry** check box, then select the **Industry** from the drop-down menu.
   - **All** check box.

2. Click the **Export** button on the Active Module Toolbar. The Notebook data for the area or industry will be exported.

Delete Area Employment

The **Delete Area Employment** module enables deletion of all employment records for a selected area.

The Delete Area Employment module is available in the Short and Long Term Projections applications. The Short Term Delete Area Employment module deletes monthly data; the Long Term module deletes annual data.

Screen Controls

- **Select an Area** drop-down menu
- **Delete all employment for area** button

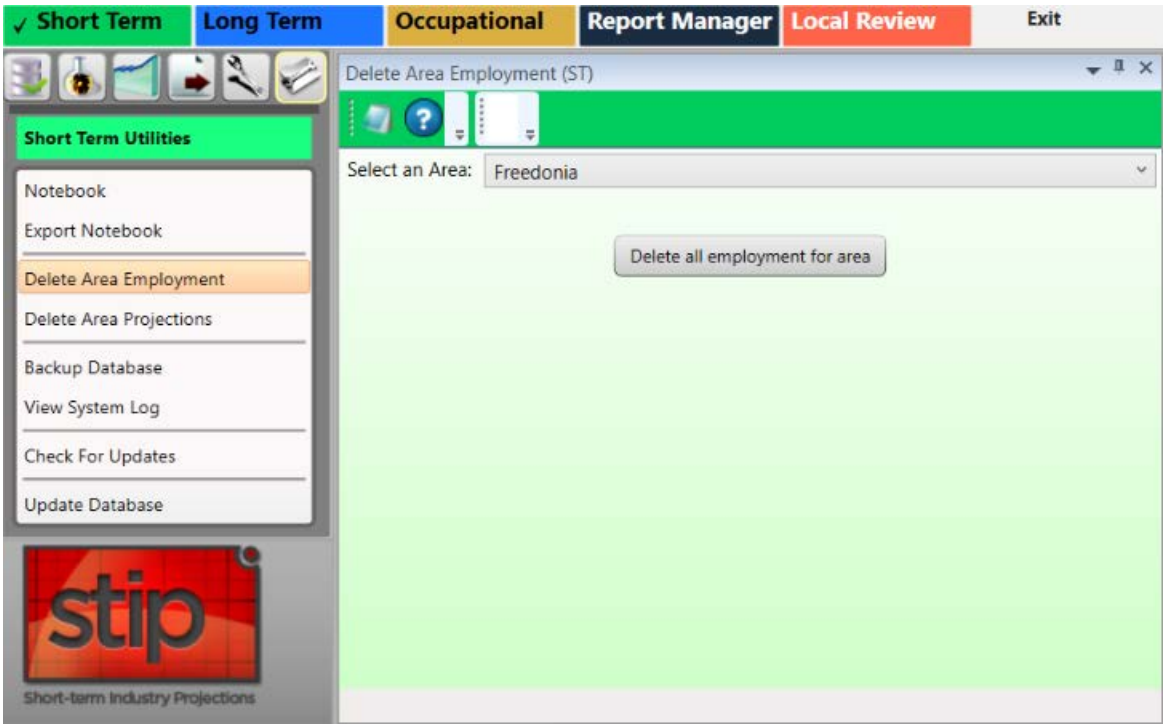


Figure 1: Delete Area Employment module

Delete Employment Records for a Specific Area

1. **Select an Area**.
2. Click the **Delete all employment for area** button. A **Delete area employment** dialog box will be displayed:

Figure 2: Verification of deletion of employment records

3. Click **Yes** to delete the records. Click **No** to keep the records.

Delete Area Projections

Compiled projections for a selected area can be deleted in the **Delete Area Projections** module.

Screen Controls

- **Select Area** drop-down menu
- **Delete projections for the selected area** button

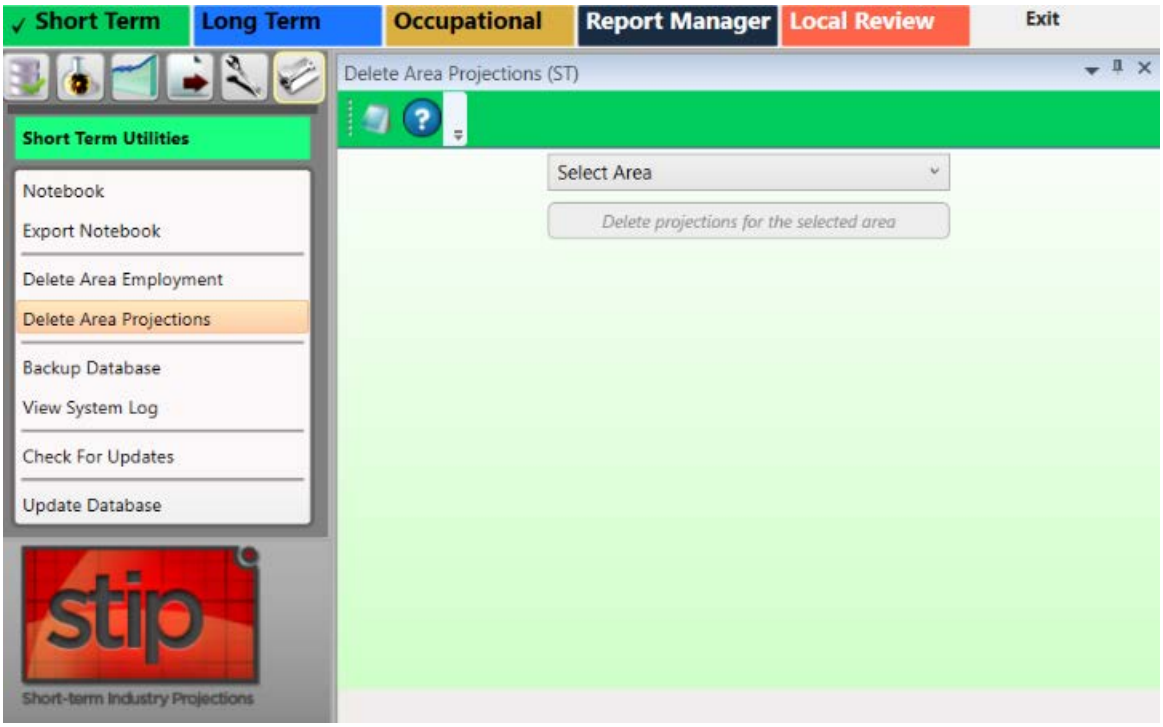


Figure 1: Delete Area Projections module

Delete Area Projections

1. Select an area from the **Select Area** drop-down menu.
2. Click the **Delete projections for the selected area** button. A dialog box will be displayed.
3. Click **Yes** to confirm the deletion of projections from the selected area. Click **No** to keep the projections for the selected area.

Backup Database

Use the **Backup Database** module to create a copy or archive the existing data in the database so the information can be restored if needed.

Backup Changes in the Database

1. Click the **Backup Database** menu choice from the **Occupational Utilities** group menu. The backup process will begin immediately. When the backup is complete, the following screen will be displayed:

Figure 1: Backup Database dialog box

2. Click **OK**.

☞If there is an issue with the backup process, a Backup error dialog displays. Read the error information and click **OK** to close the window. Correct any errors and select the Backup Database module to try again.

Set a Backup Location

If there is no backup directory selected in the DB Setup Tool, an error will be displayed. To select a backup folder:

1. Double-click the Projections Suite Database Tool icon on your desktop, or navigate to it through the Start menu.

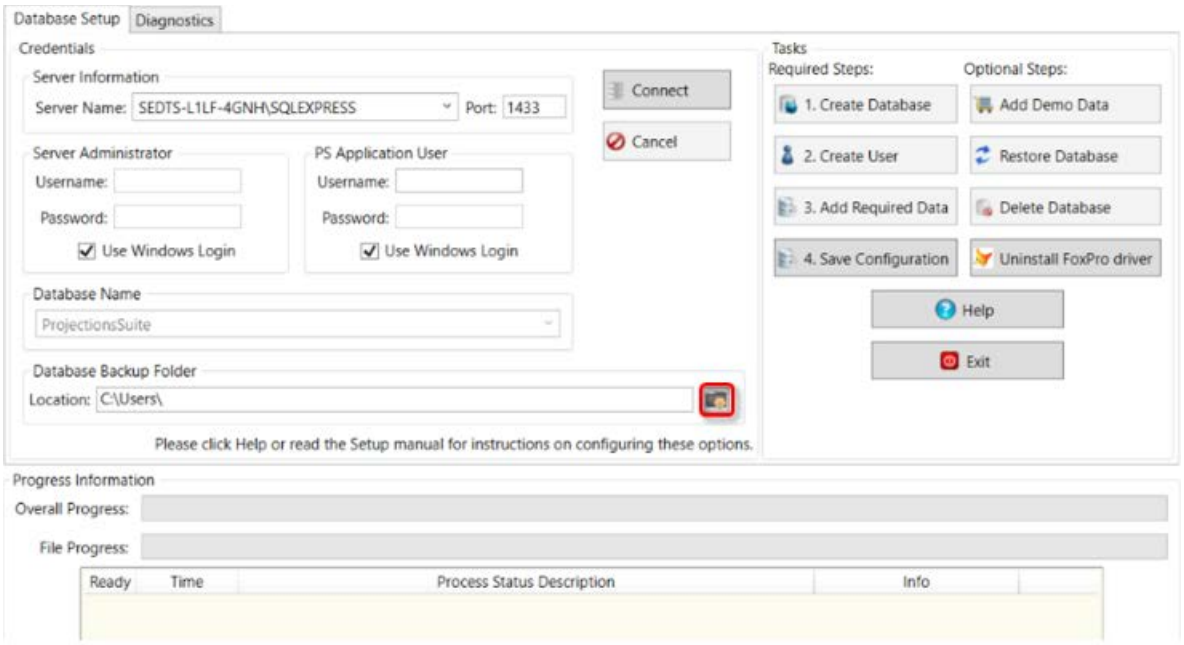


Figure 2: Projections Suite Database Tool, browse and select a database backup location highlighted

2. Click the **backup folder icon** in the DB Setup Tool.
3. Select a location for your database backup folder.
4. Click **OK**.
5. Click the (Step 4) **Save Configuration** button.
6. Exit the database tool.

Related Content

- Projections Suite Database Setup Tool

View System Log

The **View System Log** module is used in the event Projections Suite is not functioning properly. A copy of the System Log may be required to troubleshoot your Projections Suite environment. This module is available in Short Term, Long Term, and Occupational Projections.

View the System Log

1. Click the **View System Log** menu choice. Two dialog boxes will be displayed:
   - View System Log instructions dialog box, containing this message:

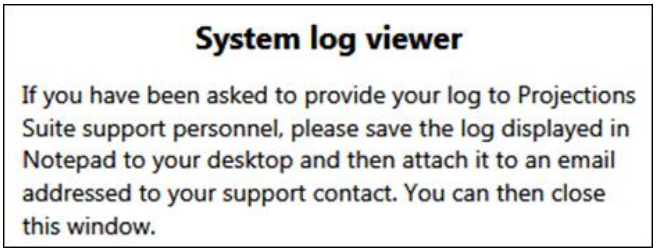


Figure 1: Instructions for sending the System Log to a support contact

   - Notepad log file containing the log information:

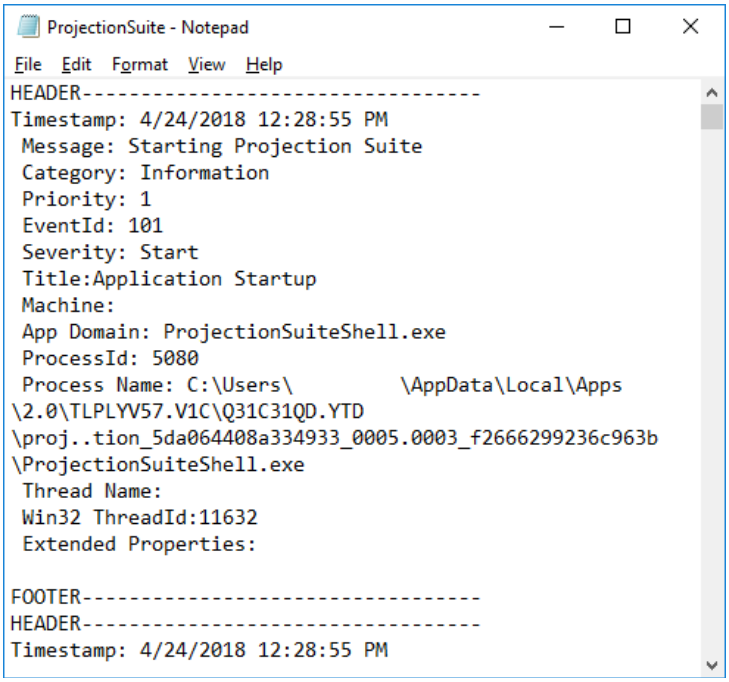


Figure 2: Projections Suite Log

Check for Updates

The **Check for Updates** module is available in Short Term, Long Term, and Occupational Projections. To check for updates to the Projections Suite application:

1. Select the **Check For Updates** option from the **Utilities** group menu.
2. Select the **Click here to check for updates** button. If the application is up to date, the following message will be displayed:

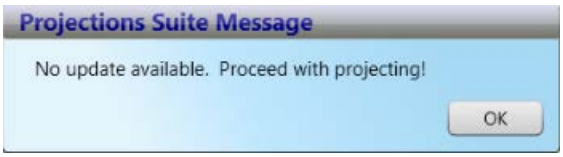


Figure 1: Projections Suite Message dialog box

Update Database

Use the **Update Database** module to update the Industry Directory with industries that are not in your directory. The Update Database module is the same in the Short Term and Long Term Projections applications.

Screen Controls

- **Update Industry Directory** button
- **Update Titles** check box

1. Select the **Update Database** module from the Long Term Utilities group menu. The Update Database module will be displayed.

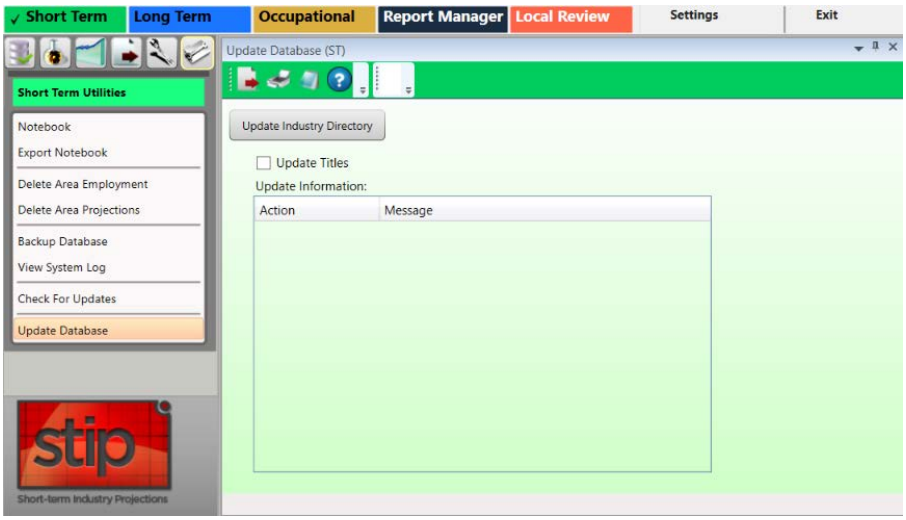


Figure 1: The Long Term Update Database module

2. To update the titles of industries in your directory, click the **Update Titles** check box. **If you use your own titles, do not select Update Titles**.

3. Click on the **Update Industry Directory** button. The Update Information table will display any system messages, or the following dialog box will be displayed:

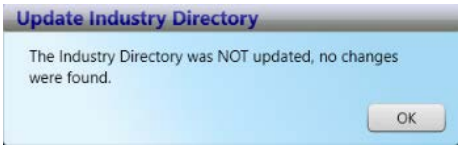


Figure 2: Update Industry Directory dialog

Long Term Industry Projections

Long Term Industry Projections Introduction

Long Term Industry Projections (LTIP) examines the methods and models involved in forecasting 10-year industry employment projections for a state or sub-state area. The LTIP application helps state analysts develop industry employment projections for input into reports and into the Occupational Projections application. Projections show trends for industries and occupations, and provide information helpful to users in making education, job training, and career decisions.

Information about Long Term Industry Projections is available on the Projections Central Support site, under LTIP Resources. The LTIP Resources contains useful checklists, national employment time series data, national variables time series data, and preliminary instructions for loading this data. Use these resources to get started with Long Term Industry Projections.

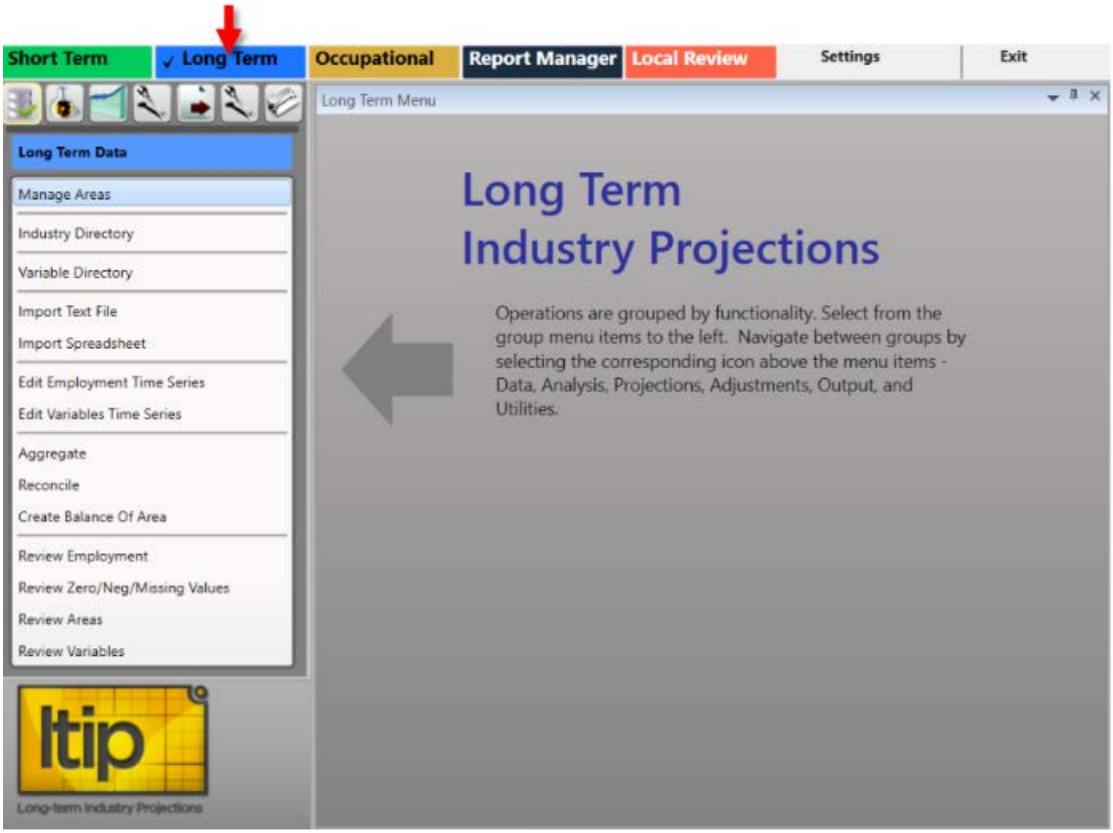


Figure 1: The Long Term Industry Projections application

The Long Term Industry Projections application contains 49 modules under the following group menu selections:

- Long Term Data (F5)
- Long Term Analysis (F6)
- Long Term Projections (F7)
- Long Term Adjustments (F8)
- Long Term Output (F9)
- Long Term Compare (F12)
- Long Term Utilities (F11)

Create a Long Term Industry Projection

This section is meant to be an end-to-end guide for creating a Long Term Projection. Visit the LTIP Resources page on the Projections Central Support website for additional, helpful information when producing Long Term Projections.

Produce Long Term Industry Projections

1. Pre-Projection Decisions and Adjustments

These decisions and adjustments should be made before starting to produce industry employment projections or forecasts.

Use Manage Areas to set the Geographic Coverage:

- Area Set Up - predefined areas
  - States
  - Counties
  - Metropolitan Statistical Areas
  - Micropolitan Statistical Areas
- Area Set Up - user defined areas
- Area Groups - user defined grouping of existing areas

Directories

- Industry Directory

  Matrix Industry Codes cross-walked from NAICS codes. Use to review or adjust industries.

- Variable Directory

  Use to review or adjust variables for use in the Projections process.

2. Import Data

- Use the Import Spreadsheet module to import annual employment data series and variable data. National Data Instructions is a help guide from Projections Central Support to get you started.
- You must have the state annual industry employment series. If you have monthly data, Aggregate by time to create an annual series. You will need annual employment data for each industry you plan to project.
- Import the National Annual Employment Series. This data is available under LTIP Resources on the Projections Central Support website.
- Import the National Economic Variable Spreadsheet. This data is available under LTIP Resources on the Projections Central Support website.

3. Review and Edit Data

- If you do not have state total all industries, you will need to create it. Use Aggregate and select **By Industry**, the **Area(s)**, the **Industry Levels** option, and **Roll up to Total**.
- Use Employment Series Analysis to add, edit, or delete data.
- The Data category > Review modules, as well as the Reconcile module are optional.
- The Analysis category modules are also optional. They give you more information about your industries.

4. Develop Long Term Industry Projections

There are three main projection models on the Projections category. You can use any or all of them, run multiple models on an industry, and save them.

Batch Processing runs all industries.

To create sub-state projections, use Project Multiple Regions. This process works like batch processing but for sub-state areas. If you are projecting sub-state, you must Create Employment from Projections in the Output category first.

The final step is the Summary module. You must select the **Model** you want to use for each industry. The Model select is the projection sent to the Occupational Projections in the ICT Export.

5. ICT Export

- Use ICT Export to transfer ICT data to Occupational Projections

Long Term Data Menu Items

Long Term Data Introduction

Use the **Long Term Data** group menu to manage areas, industries, and variables. Data importing, manipulation of data, and review tools are also available.

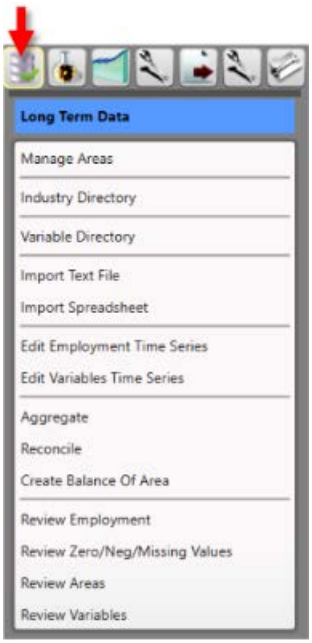


Figure 1: Long Term Data group menu

The Long Term Data group menu contains the following selections:

- Manage Areas
- Industry Directory
- Variable Directory
- Import Text File
- Import Spreadsheet
- Edit Employment Time Series
- Edit Variables Time Series
- Aggregate
- Reconcile
- Create Balance of Area
- Review Employment
- Review Zero/Neg/Missing Values
- Review Areas
- Review Variables

Manage Areas

Use the **Manage Areas** module to select and customize areas for Industry and Occupational Projections. Manage Areas organizes the basic geographical areas your projections will be calculated from. You can select your state, add or change area types, add sub-state areas, and create Area Groups. Area Groups are used in sub-state projections and the Project Multiple Regions (ST and LT) modules.

The Manage Areas module is available in the Short Term, Long Term, and Occupational Projections applications. The changes you make in any of these modules populates throughout the applications. The Notebook is not available in the Long Term Projections Manage Areas module.

Screen Controls

Area Setup section

- **Right Click Context Menu** (United States)
  - **Show All States**
  - **Hide Unchecked States**
- **Right Click Context Menu** (state)
  - **Show All Area Types**
  - **Show Area Types with Areas**
  - **Add Area Type**
  - **Create Area Group**
  - **Print Area Types**
  - **Print Areas**
  - **Print Area Groups**
- **Right Click Context Menu** (Substate)
  - **Add Area**
  - **Edit Area Type**
  - **Print Area Types**
  - **Delete Area**

Area Groups section

- **Right Click Context Menu** (Highest Level)
  - **Delete Area Group**
  - **Print Area Groups**
- **Right Click Context Menu** (Substate)
  - **Delete Area Group Member**

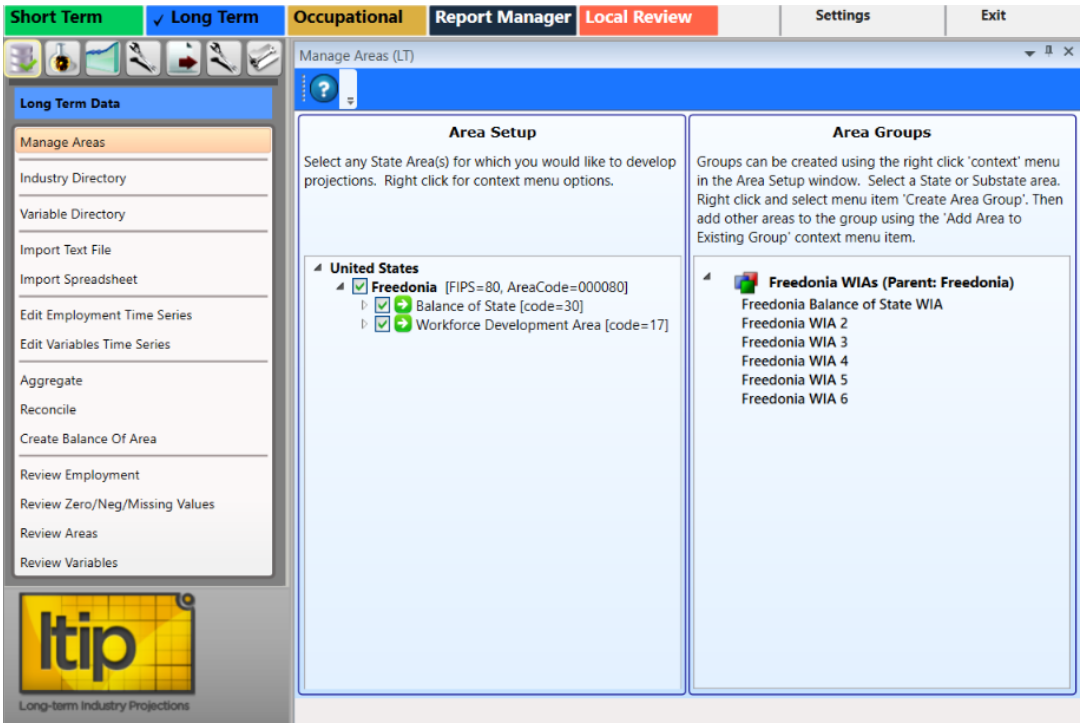


Figure 1: Manage Areas module

Area Setup Section of the Screen

1. **Right click** the **State Area** you want to work with to open its context menu.

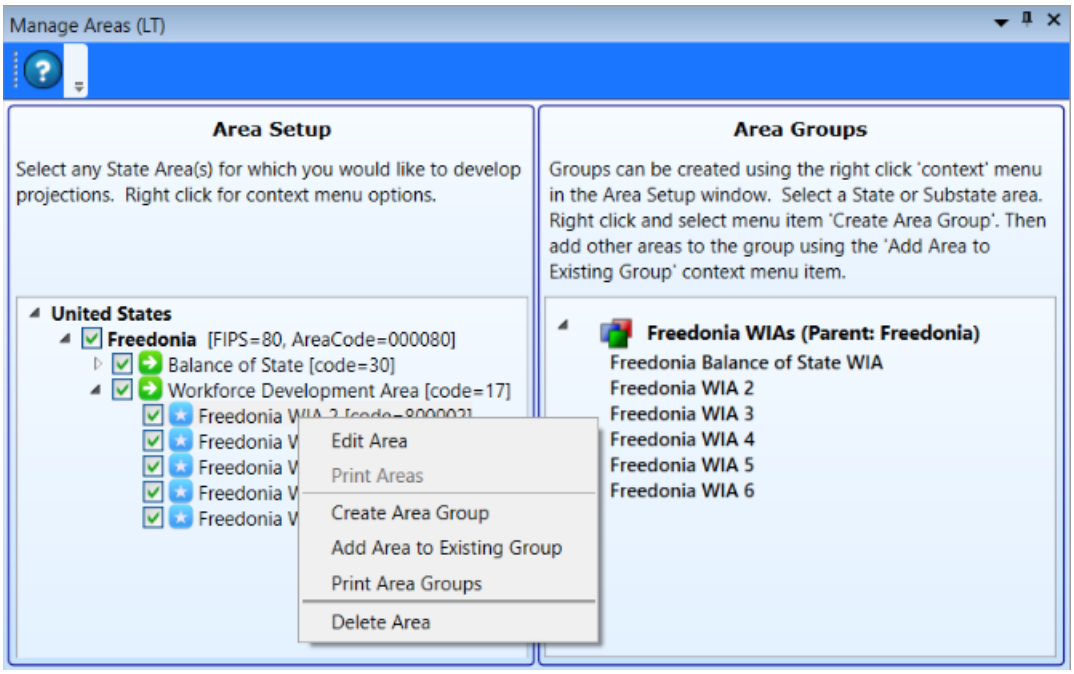


Figure 2: Context menu for working with State Areas

Depending on the changes needed to this area, click the appropriate option from the following:

- Edit Area
- Print Area
- Create Area Group
- Add Area to Existing Group
- Print Area Groups
- Delete Area

Edit an Area

1. Click **Edit Area**. The Edit Area dialog box will display:

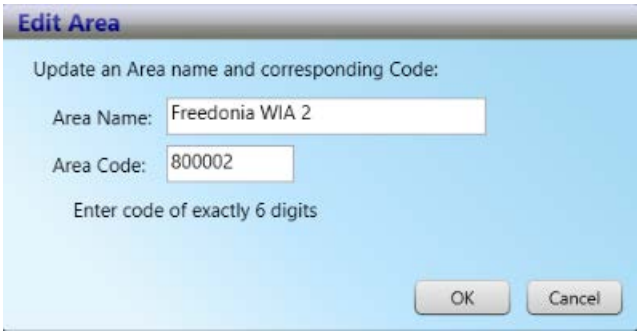


Figure 3: Edit Area dialog box

2. Change the **Area Name** and/or **Area Code**.
3. Click **OK**.

Print Areas

1. Select **Print Area Groups** from the context menu. This menu choice is accessed by right-clicking the second highest level (Freedonia, in this example) in the **Area Setup** section. The **Print Preview** screen will be displayed.
2. Click the **Print** icon to print the area's data.

Create an Area Group

1. **Right click** on the 2nd level in the **Area Setup** screen section.

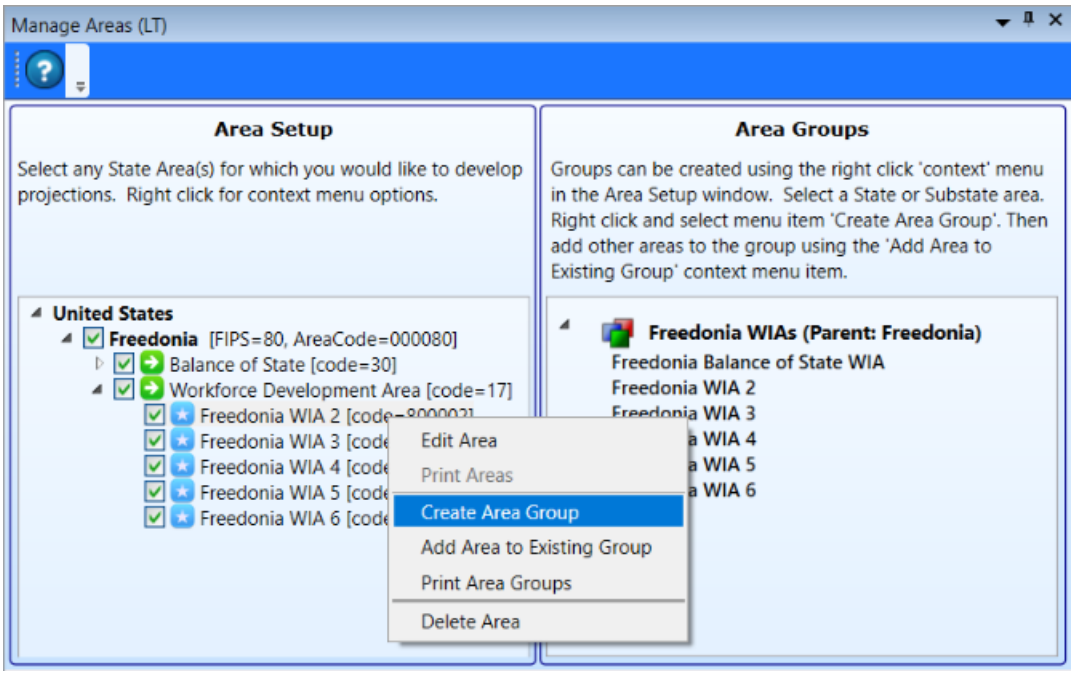


Figure 4: Create Area Group, to add to the Area Groups screen section

2. Click **Create Area Group**. The **Create Area Group** dialog box will be displayed:

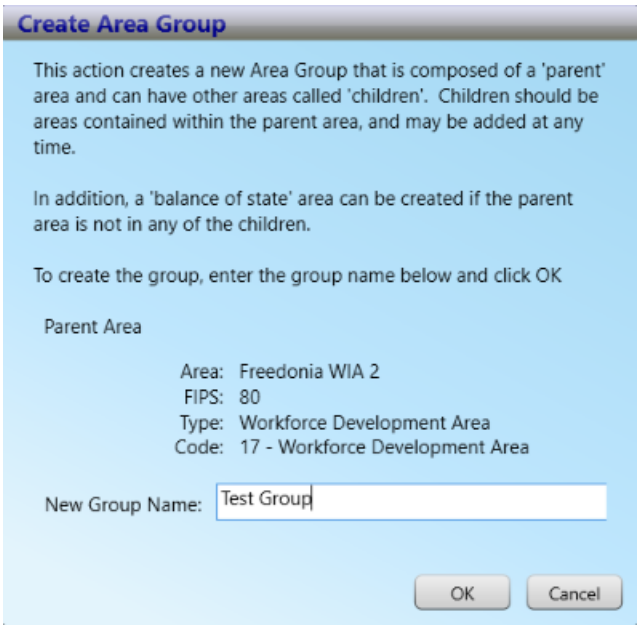


Figure 5: Create Area Group dialog box

3. Name the new **Area Group**.

4. Click **OK**. This will add the new Area Group (named Test Group, in this example) to the **Area Groups** section of the screen.

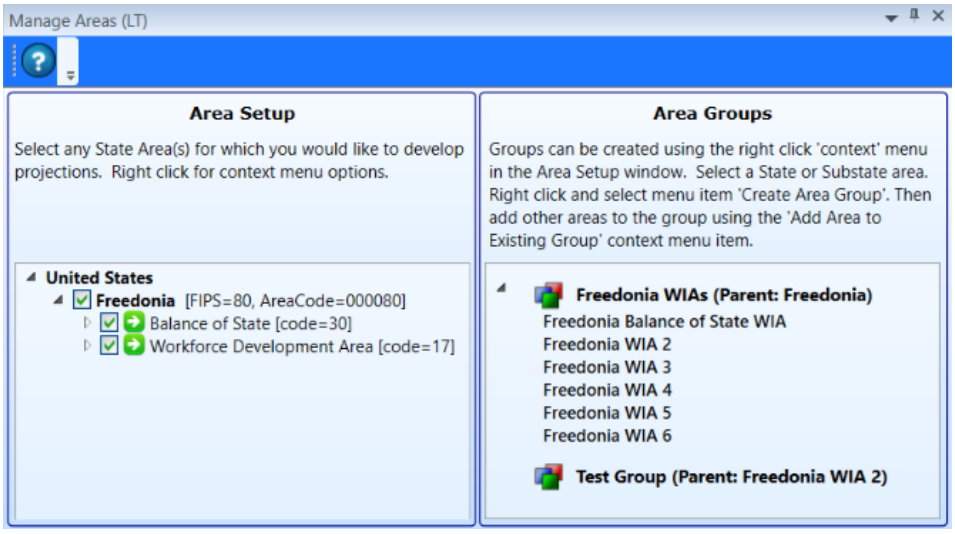


Figure 6: The new Area Group (Test Group) is added

5. Continue adding areas to the Area Group by **right-clicking** and selecting **Add Area to Existing Group** from the context menu. Select a group from the drop-down menu to add the area to the Area Group, then click **OK**.

Delete Area

1. **Right click** on the area to select it.
2. Select **Delete Area**. The following dialog box will be displayed:

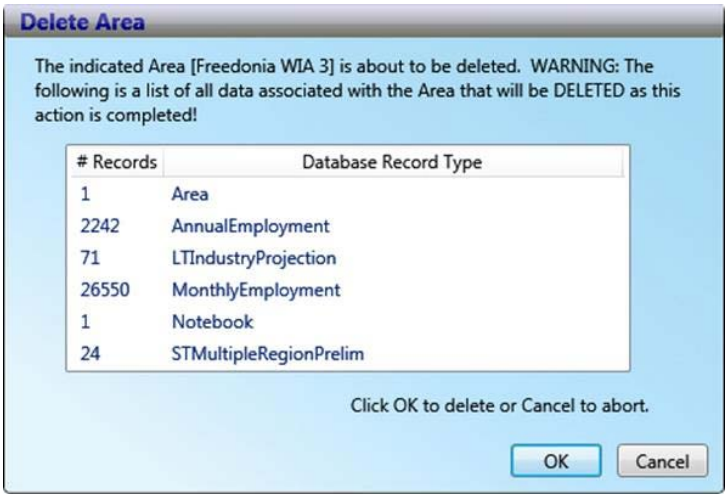


Figure 7: Delete Area dialog box

3. To delete the area, click **OK**. Click **Cancel** to keep the area.

Delete an Area Group

1. **Right click** the **Area Group** to select it for deletion.

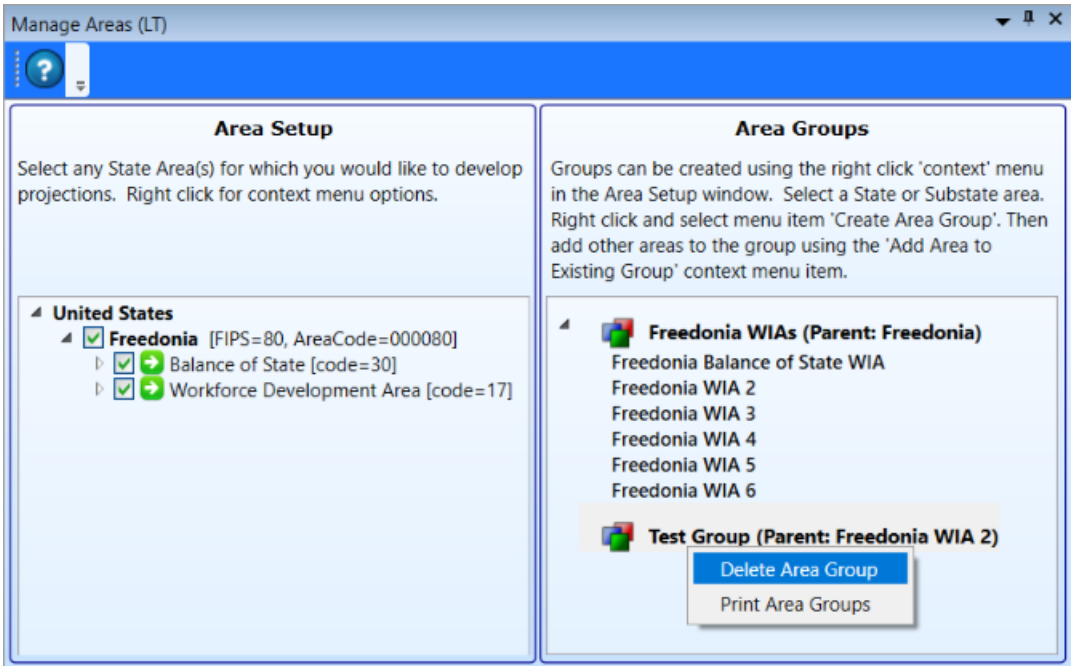


Figure 8: Delete the Area Group, Test Group

2. Select **Delete Area Group** from the context menu. You will be prompted to confirm the deletion.
3. Click **OK** to confirm. Click **Cancel** to keep the Area Group.

View Area Types

It may be helpful to view the various area types when initially setting up your Projections software, to determine the best way to classify your areas. To view all area types:

1. **Right click** your state and select **Show All Area Types**. This will list all of the area types and their associated codes in the Area Setup section.

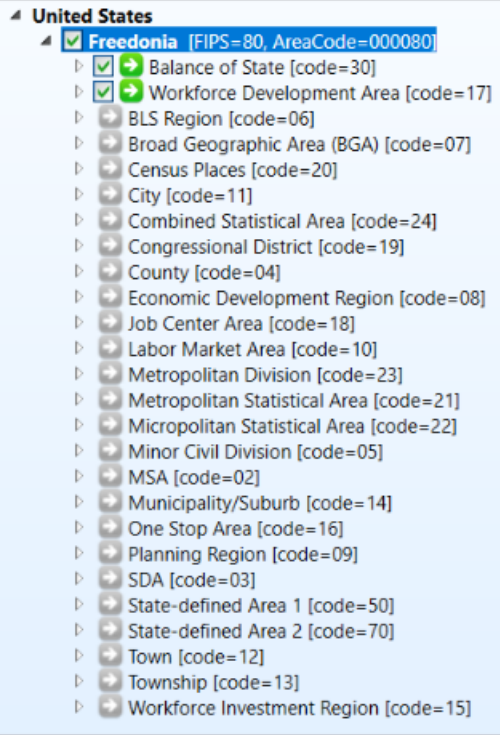


Figure 9: All area types

2. When you are finished, close the list by **right-clicking** your state and selecting **Hide Area Types With No Areas** from the context menu.

Related Content

- Create Balance of Area
- Review Areas
- Project Multiple Regions (ST and LT)
- Area Format

Industry Directory

Use the **Industry Directory** as a resource for information about specific industries, listed by NAICS. The Industry Directory lists all valid industry codes and titles in a tree view. All Projections Suite applications use it for defining industries. A default Industry Directory is installed with the Projections Suite.

Analysts can modify the directory as needed for your state. However, the position of industries in the industry tree is critical. When adding or moving industries, ensure you place them correctly within the parent industry. Industry placement will affect aggregation of employment data in later projections steps.

The Industry Directory module is available in the Short Term, Long Term, and Occupational Projections applications. The same screen displays in each application. The Notebook is not available in the Long Term Industry Directory.

Screen Controls

- **Print all industries** check box
- **Search for** field
- **Find** button
- **Expand/Collapse** arrows

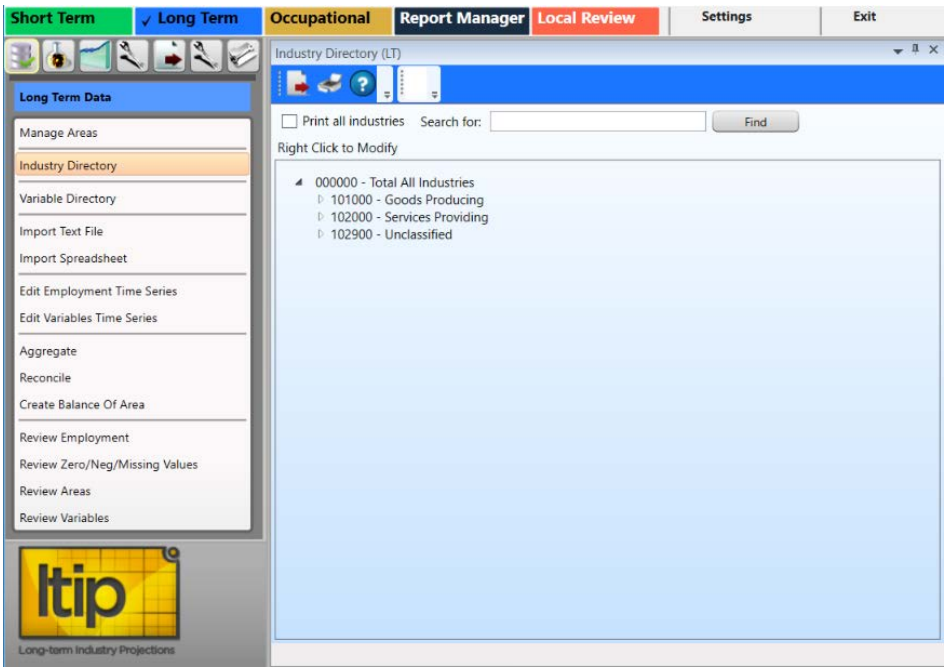


Figure 1: Industry Directory module

The **Total All Industries** code is displayed at the top of the tree. Beneath **Total All Industries** are the NAICS codes for Super-Sectors (2-digit), sectors (3-digit), and detailed industries (4 - 6 digit).

Manually Expand/Collapse the Industry Hierarchy

1. Click the **Expand** icon next to the general category of the industry. The category will expand one level.
2. Continue clicking the expand icons in that category until the desired industry level is displayed.
3. Click the **Collapse** icon on the category header to collapse to that level.

Use the Search Tool

1. Click into the **Search for** field.
2. Type an industry description or industry code.
3. Click the **Find** button or press **Enter**. The designated industry will be displayed if it is listed in the industry hierarchy.

Figure 2: Using the Search for field

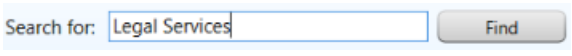


Figure 3: Use a description to find an industry

Additional Options in the Industry Directory

There are various options in the Industry Directory to help customize industries. To customize the Industry Directory:

1. **Right click** on an entry in the Industry Directory. Depending on which industry level you've selected, one of two context menus will be displayed.

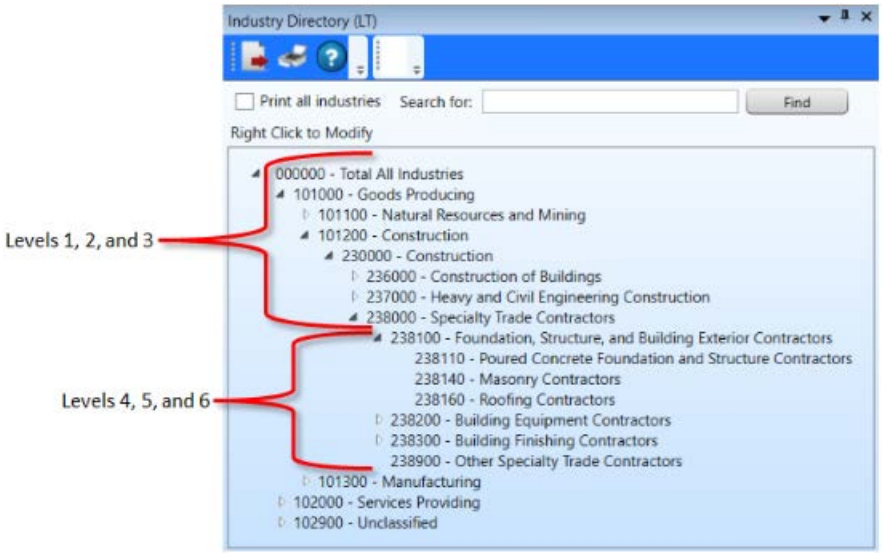


Figure 4: Industry Directory breakdown

The context menus contain the following items:

- **Expand all children** will expand the selected entry to the sixth level.
- **Collapse all children** will collapse all entries within the selected entry.
- **Add** enables the addition of new industries to the selected entry. Ensure their placement is correct to avoid future aggregation issues.
- **Cut** will remove the selected entry and copy it to the clipboard for pasting into another area.
- **Delete** will delete the selected entry.
- **Edit** enables editing of a selected entry.
- **Move** allows the selected entry to be moved to another location in the directory.
- **Paste** will paste a previously cut industry into another area in the hierarchy.

Variable Directory

The **Variable Directory** contains various area-specific variables used in Long Term Projections. The Variable Directory displays all variables by area that were defined and are available for use. These variables can be edited, deleted, and new variables may be added, allowing customization to local needs.

Variable data can be imported as a spreadsheet. Match variable names on spreadsheets exactly; misspellings will cause a new variable to be created in the directory. View the variable file format example by clicking here.

National variables are available on the Projections Central Support web site under LTIP Resources, Supplemental Files (Long-Term National Variables Time Series NatVars2026.zip).

Screen Controls

- **Select an Area** drop-down menu
- **Delete all variables in area** button
- **Delete projected values for area** button

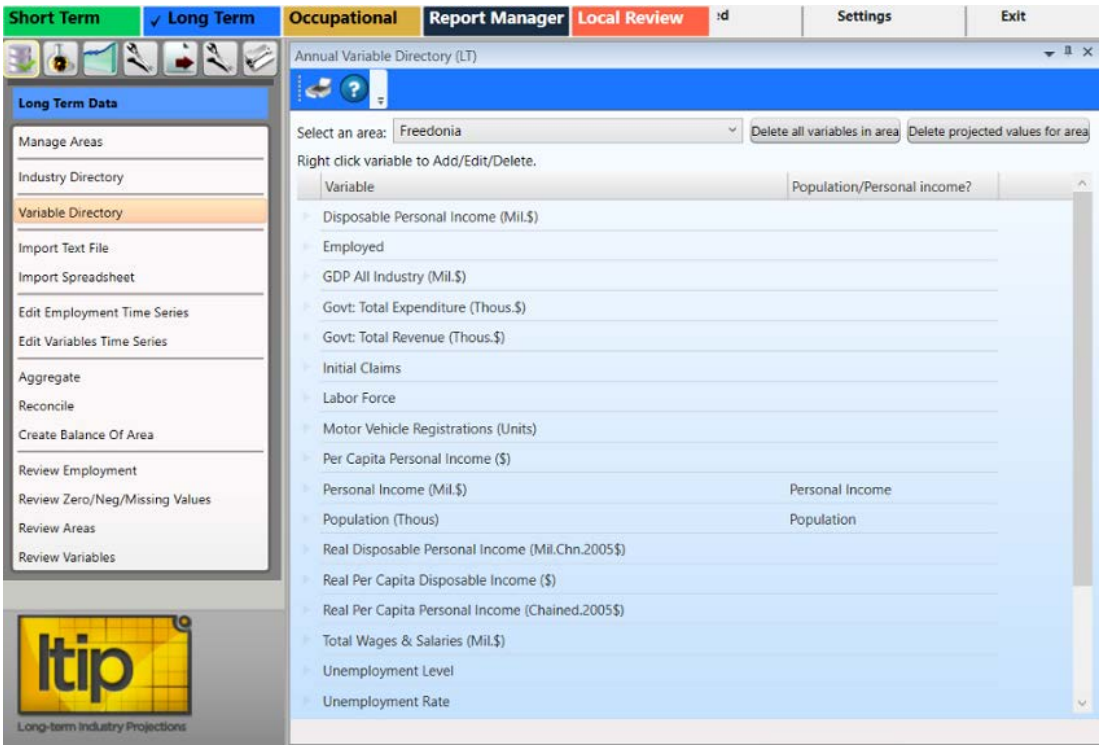


Figure 1: Variable Directory module

Add a Variable

1. **Select an area** from the drop-down menu. The variables for the selected area will be displayed.
2. **Right click** anywhere in the variable table to add a new variable.

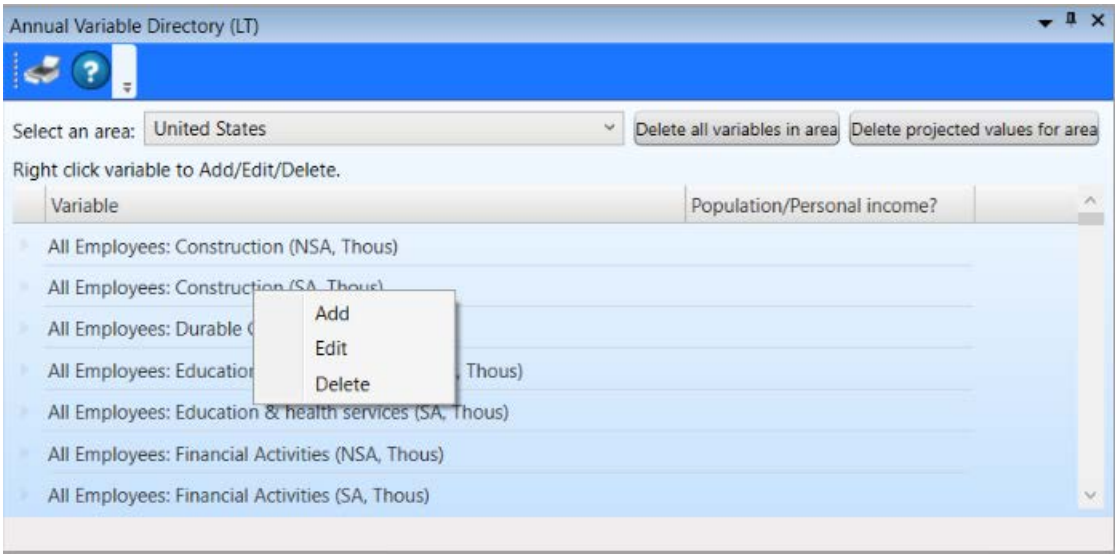


Figure 2: Annual Variable Directory context menu

3. Click the Add option. The **Add/Edit Variable** dialog box will be displayed.
4. Type the name of the new variable into the Name field.

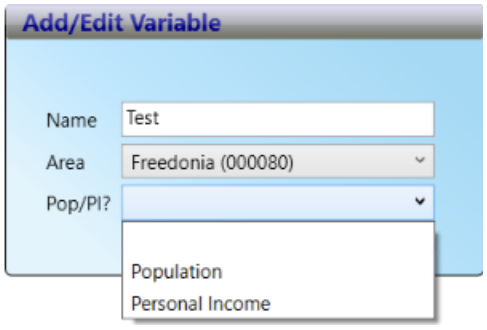


Figure 3: Add/Edit Variable dialog box

5. Select an area from the **Area** drop-down menu.
6. If the new variable is a population or personal income variable to be used in an OLS model, click the Pop/PI drop-down menu and select the Pop/PI status. You can also select neither.
7. Click **Save**. The variable will populate in the variable table.

Edit a Variable

1. **Right click** a variable to edit it. Select **Edit** from context menu.
2. Make any required changes.
3. Click **Save**.

Delete a Variable

1. **Right click** the variable to be deleted. Select **Delete** from the context menu. A confirmation dialog box will be displayed.
2. Click **Yes** to delete. Click **No** to keep the variable.

☞Deleting a variable will cause any data associated with it to be lost.

Click the **Delete all variables in area** button to delete the variables in the selected area. Click the **Delete projected values for area** button to delete the projected values for the selected area.

Related Content

- Import Spreadsheet
- Edit Variables Time Series
- Ratio Variables
- Standard Transformations

Import Text File

The **Import Text File** module is only used to import Quarterly Census of Employment and Wages (QCEW) program data.

The file is created specifically for this import by running QCEW job ES2J247D (also known as job 247D). Request the file from your QCEW analysts by providing the parameters for the specific data you need. To save time, it is very important to extract data from the QCEW job output specific to the industry employment and area data required. The text file may have the needed data, but it may require importing into a spreadsheet file first to manipulate or clean up the data before importing it. If this is the case, use the import spreadsheet module to add the data to the database. Reference the QCEW Data Extract topic for additional information.

The Import Text File module is available in the Short Term and Long Term Projections applications. The same screen displays in each application. The Notebook is not available in the Long Term Import Text File module.

Screen Controls

- **Select File to Import** field
- **Browse** button
- **Import** button
- **Change Font Size** slider

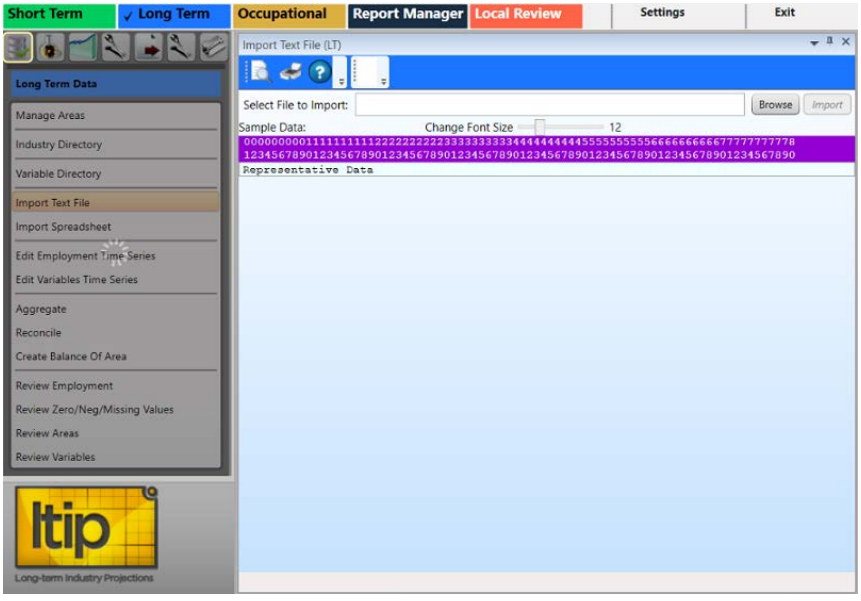


Figure 1: Import Text File module

☞The format of the text file to be imported must have the data elements of the table into which it is imported. The valid table formats are below. Click the appropriate link to see details:

QCEW Text Format

The QCEW text file format consists of a fixed set of 42 or 43 required columns, depending on the QCEW type (Expo202 or Win202, respectively). If the text file has fewer or greater number of columns, the application will display errors. For additional information about this format, click here.

Win202/MSA Text Format

The Win202/MSA format is similar to the standard QCEW format, except the area code has one additional column. The import software expects this format to have 43 columns. If the text file has fewer or greater number of columns, the application will display errors. For details about this format, click here.

Import Text File

1. Click the **Browse** button.
2. Select the text file and click **Open**. The first row of data will appear below the purple bar.

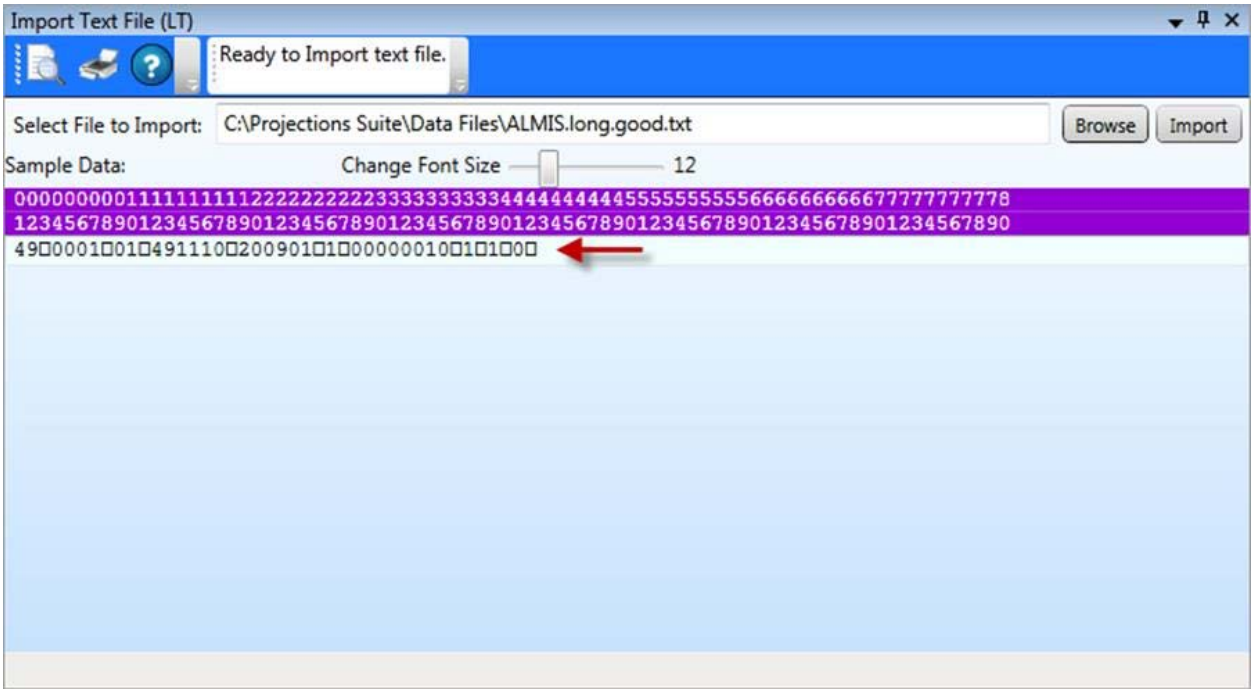


Figure 2: First row of data in file

Numbers in the purple bar are read top to bottom to indicate the column position they represent. For example, 0 and 1 is the first column position. 1 and 0 is the tenth column position. 2 and 5 is the twenty-fifth column position, and so on. These column positions help in explaining the data elements of the text file.

☞Click the **Preview** button on the Active Module Toolbar to preview the data in the text file.

3. If you are satisfied with the file layout, click **Import**. There are two places import information displays (see Figure 3):

- The Active Module Toolbar.
- A detailed data validation message/confirmation will be displayed in the message grid. These messages will provide information to determine the cause of import errors.

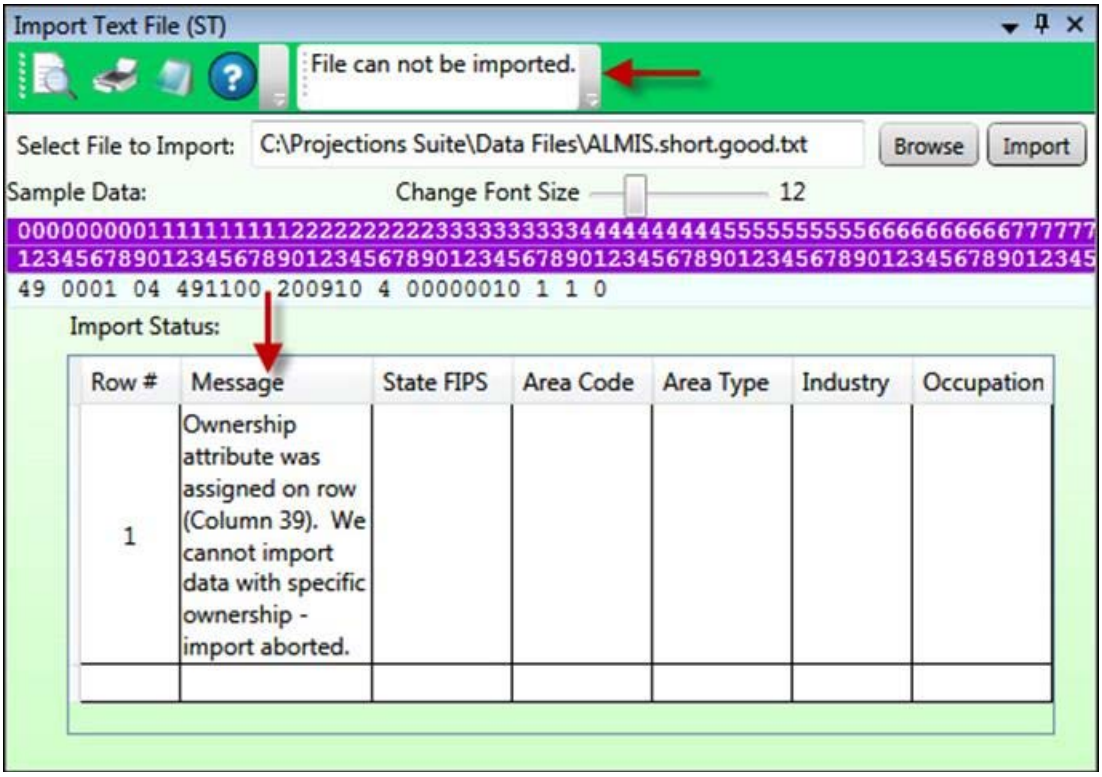


Figure 3: Data validation messages

4. If you are not satisfied with the file layout, click **Cancel**. The import will stop.

☞Once the data is imported, you can view it in the Review Employment module to verify the information is correct or resolve any problems if it is not.

5. Click the **X** in the top right corner to close the Import Text File module to enable the other group menu selections.

Related Content

- File Formats Introduction
- QCEW Output Text Format
- Win202/MSA Text Format
- QCEW Data Extraction Instructions

Import Spreadsheet

Use **Import Spreadsheet** to import various spreadsheet formats. This is the most common method for importing data. Spreadsheet file formats must be exact. For additional information and examples of file formats, reference the File Formats Introduction topic.

The Import Spreadsheet module is available in the Short Term and Long Term applications. The same general screen displays in each application, however, if you attempt to import data meant for use in the Long Term application while using the Short Term Import Spreadsheet module (and vice versa), you will be prompted to use the correct module for importation. The Notebook is not available in the Long Term Import Spreadsheet module.

Screen Controls

- **Select File to Import** field
- **Browse** button
- **Import** button
- **Detected file type** field

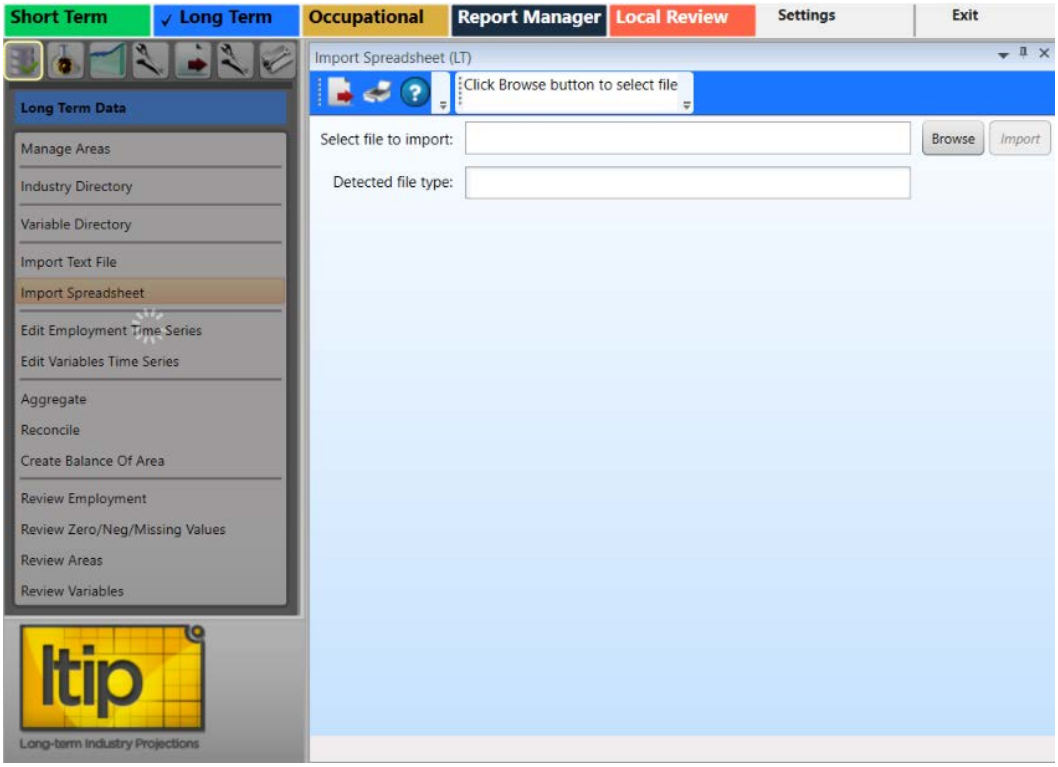


Figure 1: Import Spreadsheet module

Import a Spreadsheet

1. Click the **Browse** button.

2. Select the spreadsheet file and click **Open**. The system will validate the data and display the file type in the **Detected file type** field. Depending on the type of import, you will be prompted to classify variables and validation messages (if any) will display.

3. Click the **Import** button. An Import Spreadsheet dialog box will be displayed, indicating if the import was successful and how many usable rows will be imported.

4. Click **Yes** to import the valid records. Click **No** to stop importing the records. Clicking **Yes** will display the Import Spreadsheet dialog box:

Figure 2: Successfully imported records

5. Click **OK**. Import Status messages will display in the message grid.

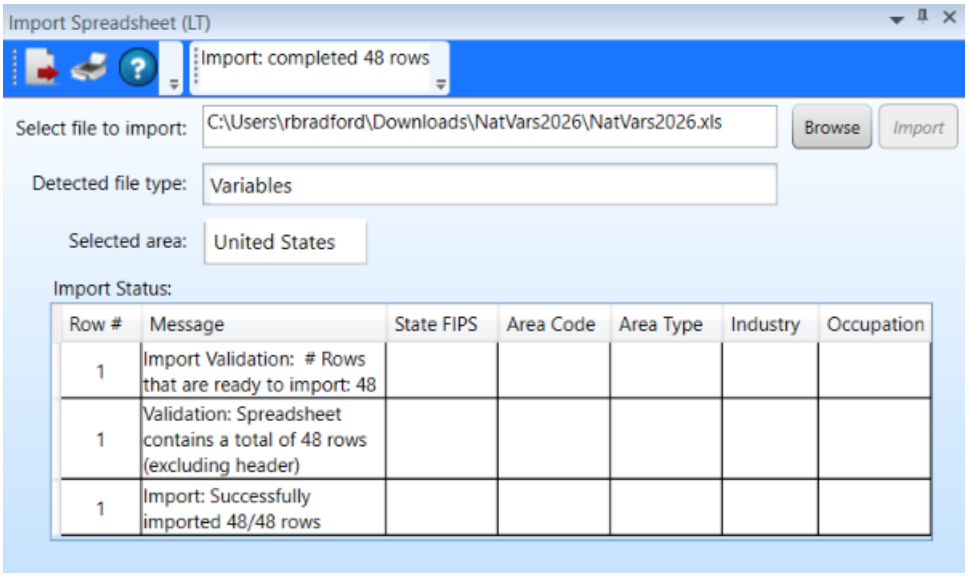


Figure 3: Import Status messages

6. Click the **X** in the top right corner to close the Import Spreadsheet module and enable the other group menu items.

Related Content

- File Formats Introduction
- Variable Directory

Edit Employment Time Series

Use the **Edit Employment Time Series** module to view and edit the historical pattern of an industry, for a specific time period.

Annual Employment data is imported into the Projections Suite database from an external file. Typically, changes are made prior to importing. However, there may be times when you need to make edits.

Screen Controls

- **Area** drop-down menu
- **Industry** drop-down menu
- **Delete Data Series** button
- **Display** date spinners
    - **Max** button

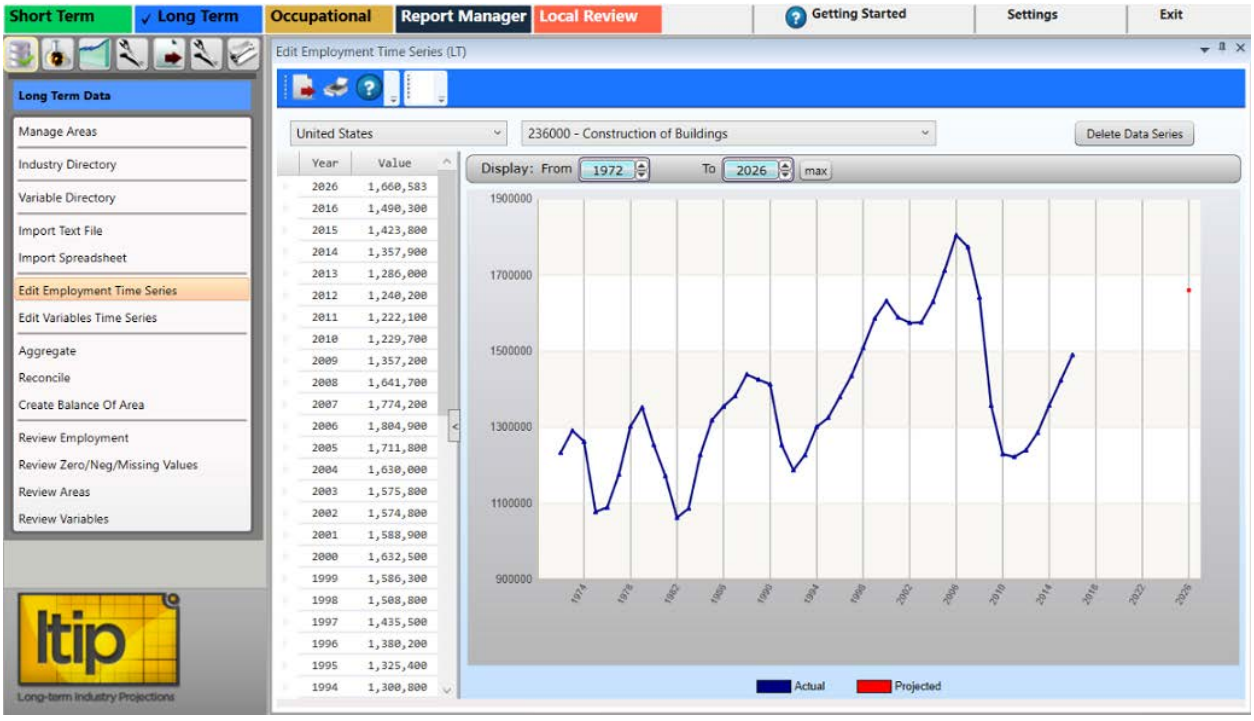


Figure 1: Edit Employment Time Series module

Edit the Employment Time Series

1. Select an area from the **Area** drop-down menu.
2. Select an industry from the **Industry** drop-down menu.

3. Select a time frame by manipulating the Display date spinner. The actual employment for the selected area, industry, and time frame will be displayed.

4. **Right click** the data table on the left. A contextual menu will be displayed.

- **Add** will allow you to add new values to the data series.
- **Edit** enables the editing of current values.
- **Delete** will delete data points from the series. Delete multiple rows by selecting multiple items.

☞Be cautious when deleting data points. Missing data points cause major problems because time-series and OLS models cannot project an employment series with data points missing.

Delete the Displayed Data Series

1. Select the area, industry, and date to navigate to the data series you want to delete.

2. Click the **Delete Data Series** button. A confirmation dialog box will be displayed.

3. Click **Yes** to delete the data series. Click **No** to keep the data series.

☞The data series can be retrieved by reloading the database.

Edit Variables Time Series

Use the **Edit Variables Time Series** module to view and edit the annual pattern of the selected variable.

Variable data is imported into the Projections Suite database from an external file with the Import Spreadsheet module. Typically, any changes are usually made prior to importing. However, there may be times you need to make edits.

Screen Controls

- **Select an Area** drop-down menu
- **Select an Annual Variable** drop-down menu
- **Delete Data Series** button

Figure 1: Edit Variables Time Series module

Edit the Variables Time Series

1. **Select an Area** from the drop-down menu.
2. **Select an Annual Variable**. The variable time series for the selected area and annual variable will be displayed.

3. **Right click** the data table on the left to open a context menu.

- **Add** will allow you to add new values to the data series.

☞This is a method to add a single value. If you have many to enter, you can use the Import Spreadsheet module.

- **Edit** enables the editing of current values.
- **Delete** will delete data points from the series. Delete multiple rows by selecting multiple items.

☞Be careful when deleting data points. Variables with missing data points cannot be used as inputs into OLS regression models.

Delete the Displayed Data Series

1. Select the area and variable to navigate to the variable series you want to delete.
2. Click the **Delete Data Series** button. A confirmation dialog box will be displayed.
3. Click **Yes** to delete the data series. Click **No** to keep the data series.

Related Content

- Variable Directory

Aggregate

The **Aggregate** module is a tool for creating industry employment series within the system, rather than importing data from external sources. With the aggregation tools, you can create total industry series from more detailed industries and ensure that state total records are the sum of sub-state records. The Aggregate module allows the user to rollup data across selected areas, industries, and time. For example, if employment information is imported for 3-digit industries, you can aggregate employment from the detailed 3-digit industries to sector (2-digit) industries. Also, aggregation by time can create an annual employment series from monthly employment series. You have the option of creating new records or supplementing already existing data.

The Aggregate module is available in the Short and Long Term applications. The same screen displays in each application. The Notebook is not available in the Long Term Aggregate module.

Screen Controls

- **Select aggregation type** down-down menu
- **Industry** radio button
- **Industry Levels** radio button
- **Select an Industry** drop-down menu
- **Select an industry Level** drop-down menu
- **Roll up to** drop-down menu
- **Overwrite** radio button
- **Add** radio button
- **Aggregate Data** button
- **View Results Data/Graph** button

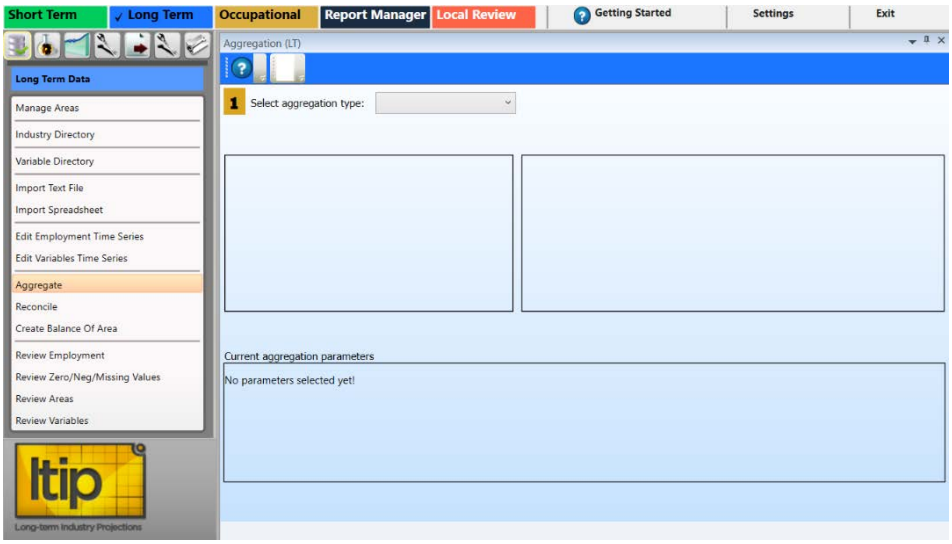


Figure 1: Aggregate module

☞The Aggregate module uses numeric step indicators to guide the process. After Step 1 (select aggregation type), the other steps will be enabled.

Aggregate by Industry

Aggregating by Industry adds employment across various industry levels or groups of industries for a particular area or group of areas.

1. Select **Aggregate by Industry** from the **Select aggregation type** drop-down menu. The step guide buttons will be unlocked.

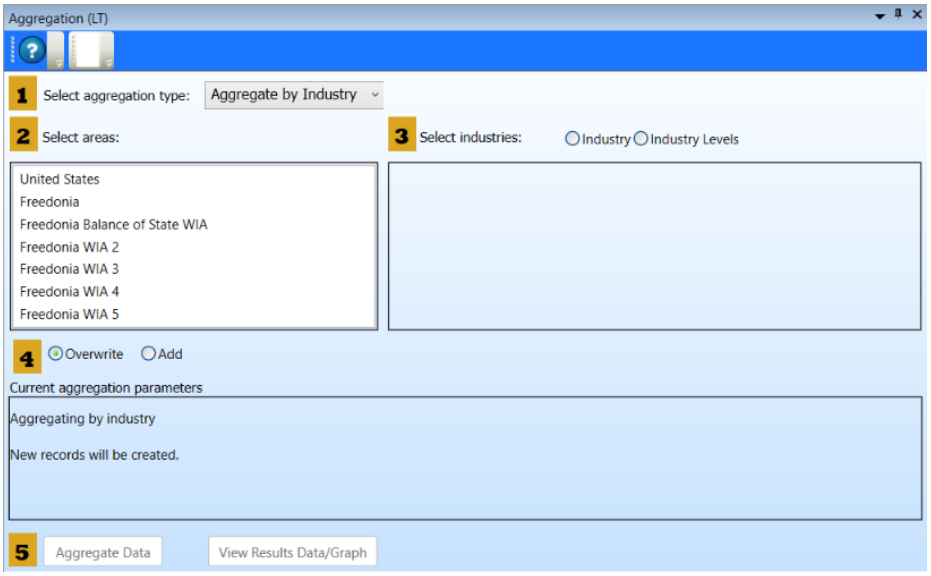


Figure 2: Aggregate by Industry selected

2. **Select areas** to aggregate from the area list box. The list shows all areas with monthly employment in the database. For assistance with selecting multiple items, click here.

3. Select the **Industry** or **Industry Levels** radio button.

- When the **Industry** radio button is selected, the **Select an industry** drop-down menu becomes available. Selecting an industry will populate the **Select industries to sum** window. Select the industries to include in the aggregation from the **Select industries to sum** window and continue to the next step.
- Selecting the **Industry Levels** radio button enables you to **Select an industry Level** from the drop-down menu and select a level to **Roll up to** from the drop-down menu. Option combinations are available to aggregate data at various industry levels. The chosen industry level will select the next highest level to **Roll up to** automatically, but higher roll-up levels can be selected as well.

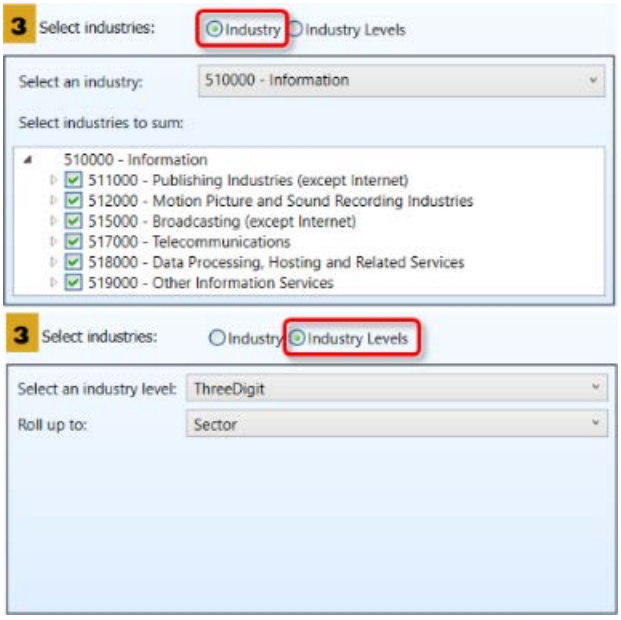


Figure 3: Select industries option groups

☞Each time selections are made, the **Current aggregation parameters** window will change to reflect the modifications.

4. Select an **Overwrite** or **Add** radio button option.

- **Overwrite** will replace an existing data point with newly summed data. It will only do this on a year-by-year basis. Years not part of the rollup process will be left unaffected.

- **Add** will add the new value to existing data, if that data is present. This is a way to supplement the aggregation process.

5. Click the **Aggregate Data** button to perform the rollup.

6. Click the **View Results Data/Graph** button. The **Aggregation Results** screen will activate to show the results of the aggregation. If other areas or industries were chosen in Step 2, they will be available from the drop-down boxes.

Figure 4: Aggregation Results

☞To view statistical values overlaid on the data, select the Graph Enhancement Controls at the bottom of the graph. Use the Display date spinner or select chart dates with the mouse to examine the data.

Aggregate by Area

Aggregate by Area sums the employment for each child member of an Area Group and creates a new employment series for the parent area, for a particular industry or group of industries.

1. Click the **Select aggregation type** drop-down menu and select **Aggregate by Area**.
2. Select a group from the **Select area groups** list. More than one Area Group can be selected.
3. Select either the **Industry** or **Industry Levels** radio button option. Select specific industries from the industry list, or select an industry level.
4. Click the **Aggregate Data** button.

Aggregate by Time

Aggregation by Time will average monthly employment for a year to create annual employment for that year, for specific areas and industries.

1. Click **Aggregate by Time** from the **Select Aggregation Type** drop-down menu.
2. **Select the areas** to include in the aggregation.
3. Select the **Industry** or **Industry Levels** radio button. Select the industries to include.
4. Click the **Aggregate Data** button.

Related Content

- Industry Mix (LT)
- Create a Long Term Industry Projection

Reconcile

Use the **Reconcile** module to compare Summed Employment and Actual Employment for industries, areas, or times. Reconcile is a tool that helps you determine the consistency of industry employment in the database. It's important, for example, that employment in sub-state areas adds to employment at the state level for each industry, and that employment adds consistently across industry levels. It's also important that annual data be reflective of monthly data for the same industry and area. The Reconcile module provides diagnostic information for all of these scenarios.

The Reconcile module is available in the Short Term and Long Term applications. The same screen displays in each application. The Notebook is not available in the Long Term Reconcile module.

Screen Controls

- **Select reconciliation type** drop-down box
- **Select areas** list box
- **Select industries** option group
    - **Industry** radio button
    - **Industry Levels** radio button
- **Select an industry** drop-down box
- **Select industries to sum** check boxes
- **Select an industry level** drop-down box
- **Roll up to** drop-down box
- **Reconcile Data** button
- **Off** radio button
- **Absolute difference greater than** radio button/spinner
- **Percent difference great than** radio button/spinner
- **Date Range** spinner
- **View Results Data/Graph** button

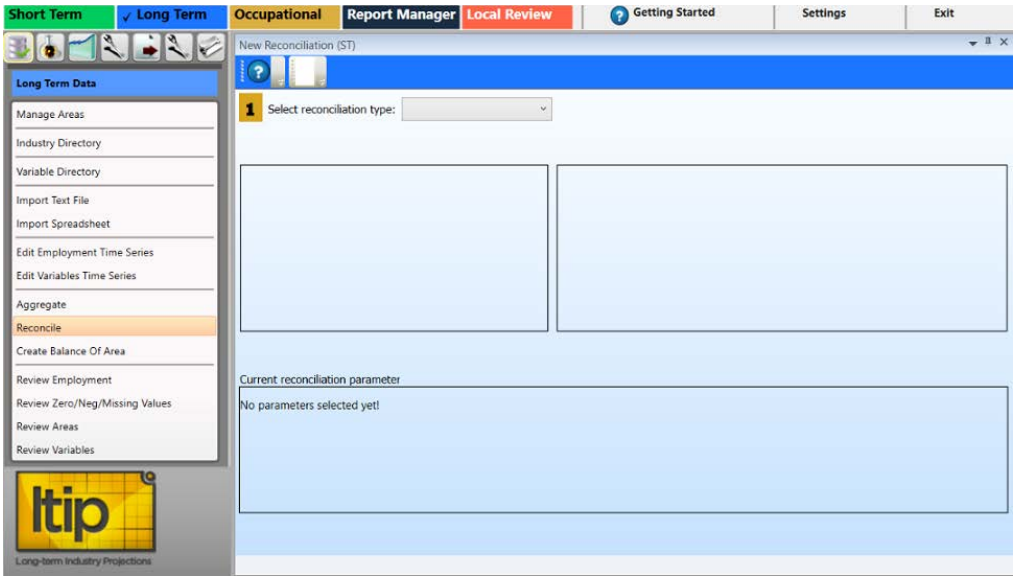


Figure 1: Reconcile module

☞The Reconcile module uses numeric step indicators to guide the process. After Step 1 (select reconciliation type), the other steps will be enabled.

Reconcile by Industry

Reconcile by Industry compares employment between various industry levels or groups of industries, for a particular area or group of areas.

1. Select **Reconcile by Industry** from the **Select reconciliation type** drop-down.
2. **Select area(s)** to be included in the reconciliation.

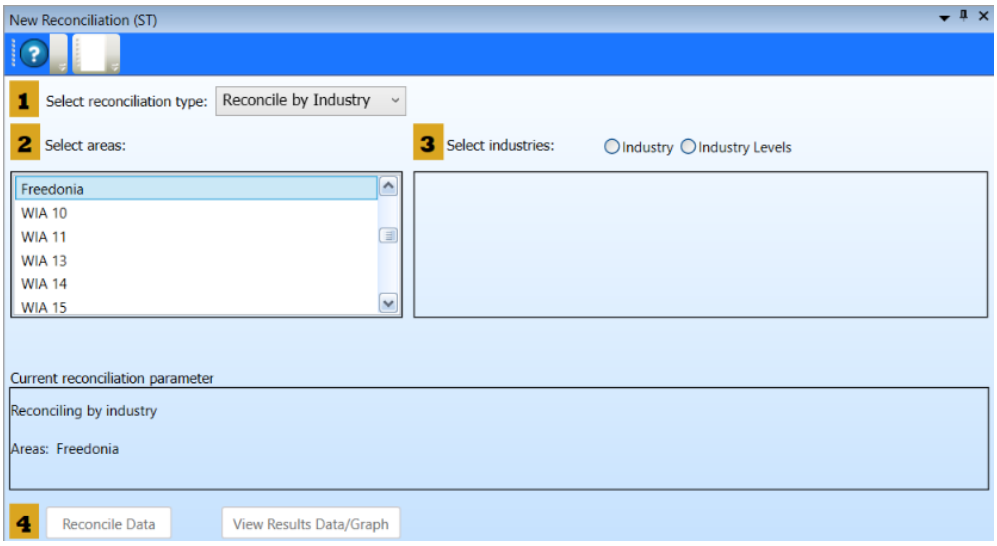


Figure 2: Select the area(s)

3. Select the **Industry** or **Industry Levels** radio button.

- If the **Industry** radio button is selected, the **Select an industry** drop-down menu becomes available. After selecting an industry, the **Select industries to sum** window will populate. Select the industries to include in the reconciliation from the **Select industries to sum** window and continue to the next step.
- Selecting the **Industry Levels** radio button will allow you to **Select an industry level** and **Roll up to** level from two drop-down menus. The selected Industry Level will choose the next highest level to **Roll up to** automatically, but higher roll-up levels can be selected from the menu.

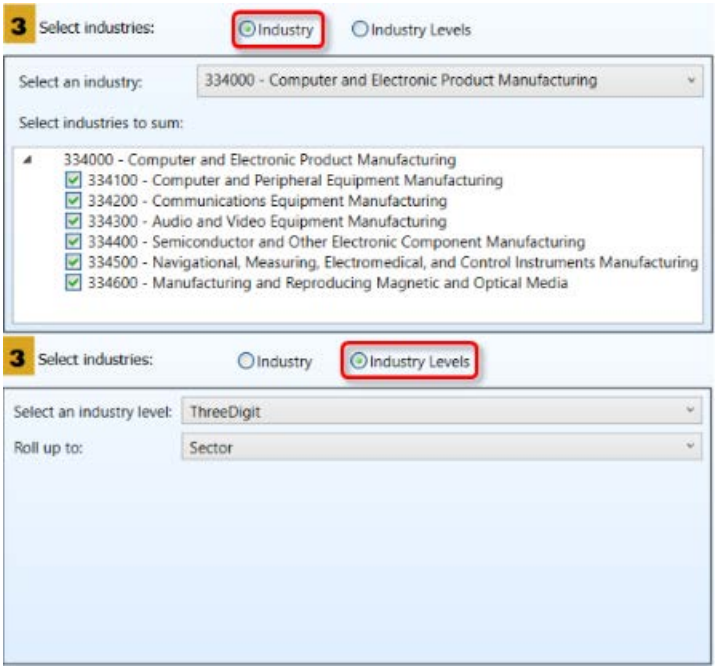
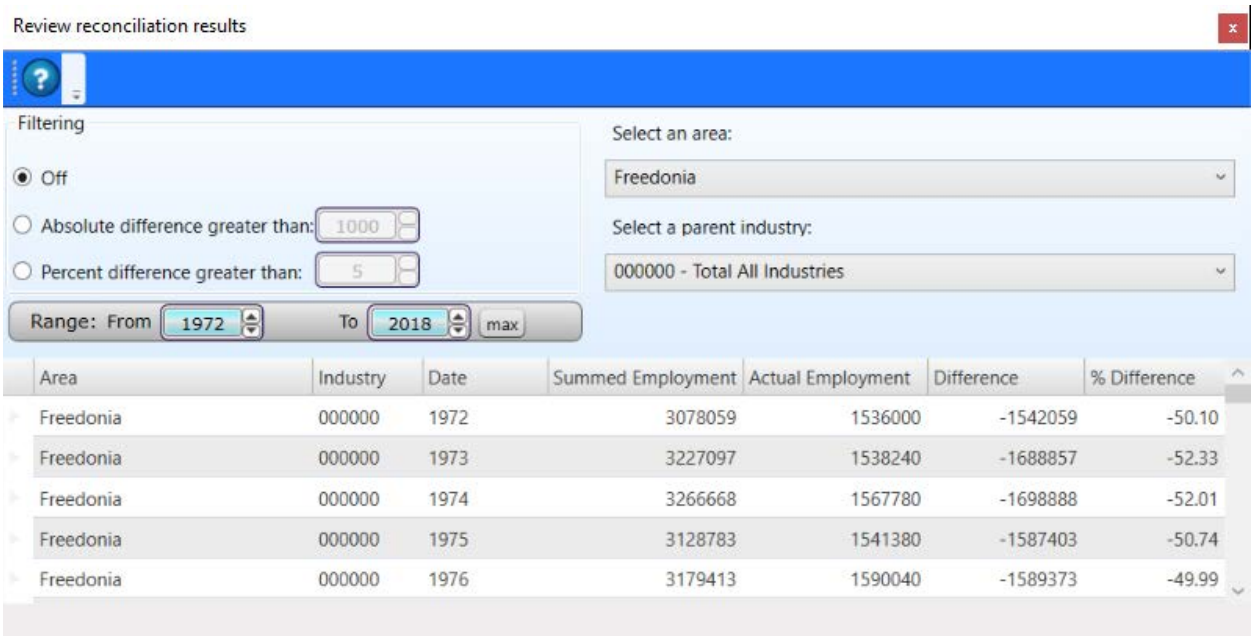


Figure 3: Select an Industry or Industry Levels

☞Each time selections are made, the **Current reconciliation parameter** window will change to reflect the modifications.

4. Click the **Reconcile Data** button.

5. Click the **View Results Data/Graph** button. The **Review reconciliation results** screen will open in a new window to show the results of the reconciliation. If other areas or industries were chosen, they will be available from the drop-down boxes.



Area	Industry	Date	Summed Employment	Actual Employment	Difference	% Difference
Freedonia	000000	1972	3078059	1536000	-1542059	-50.10
Freedonia	000000	1973	3227097	1538240	-1688857	-52.33
Freedonia	000000	1974	3266668	1567780	-1698888	-52.01
Freedonia	000000	1975	3128783	1541380	-1587403	-50.74
Freedonia	000000	1976	3179413	1590040	-1589373	-49.99

Figure 4: Review reconciliation results

☞Other options are available to filter results. The filter defaults to off. One way to filter is the **Absolute difference greater than** spinner. The default value is 1000, but you can adjust this. Another filter is a **Percent difference greater than** spinner. A **Date Range** spinner is also available to view results within a specific time frame.

Reconcile by Area

Reconcile by Area compares employment in the members of an Area Group to the employment in the parent area for a particular industry or industries.

1. Select **Reconcile by Area** from the **Select reconciliation type** drop-down.
2. **Select area groups** to be included in the reconciliation.
3. Click a **Select Industries** radio button.
4. Click the **Reconcile Data** button.
5. Click the **View Results Data/Graph** button. The **Review reconciliation results** screen will display the results of the reconciliation.

Reconcile by Time

Reconcile by Time compares the average monthly employment for a year to the annual employment for that year, for specific areas and industries.

1. Select **Reconcile by Time** from the **Select reconciliation type** drop-down.

2. **Select area(s)** to be included in the reconciliation.
3. Click a **Select industries** radio button and make your selections.
4. Click the **Reconcile Data** Button. The **Review reconciliation results** screen will activate to show the results of the reconciliation.

Related Content

- Industry Mix (LT)

Create Balance of Area

Create Balance of Area creates a new area consisting of all employment in a parent area that does not belong to the child members of the area group. For example, if a state is projecting employment in metropolitan statistical areas (MSAs), a state's balance of area would contain the remainder of the employment in the state that lies outside the MSAs. A Balance of Area is also known as a Balance of State (BOS).

The Create Balance of Area module is available in the Short Term and Long Term applications. The same screen displays in each application. The Notebook is not available in the Long Term Create Balance of Area module.

Screen Controls

- **Select an Area Group** down-down menu
- **Provide a Name** input field
- **Area Code** input field
- **Process** button

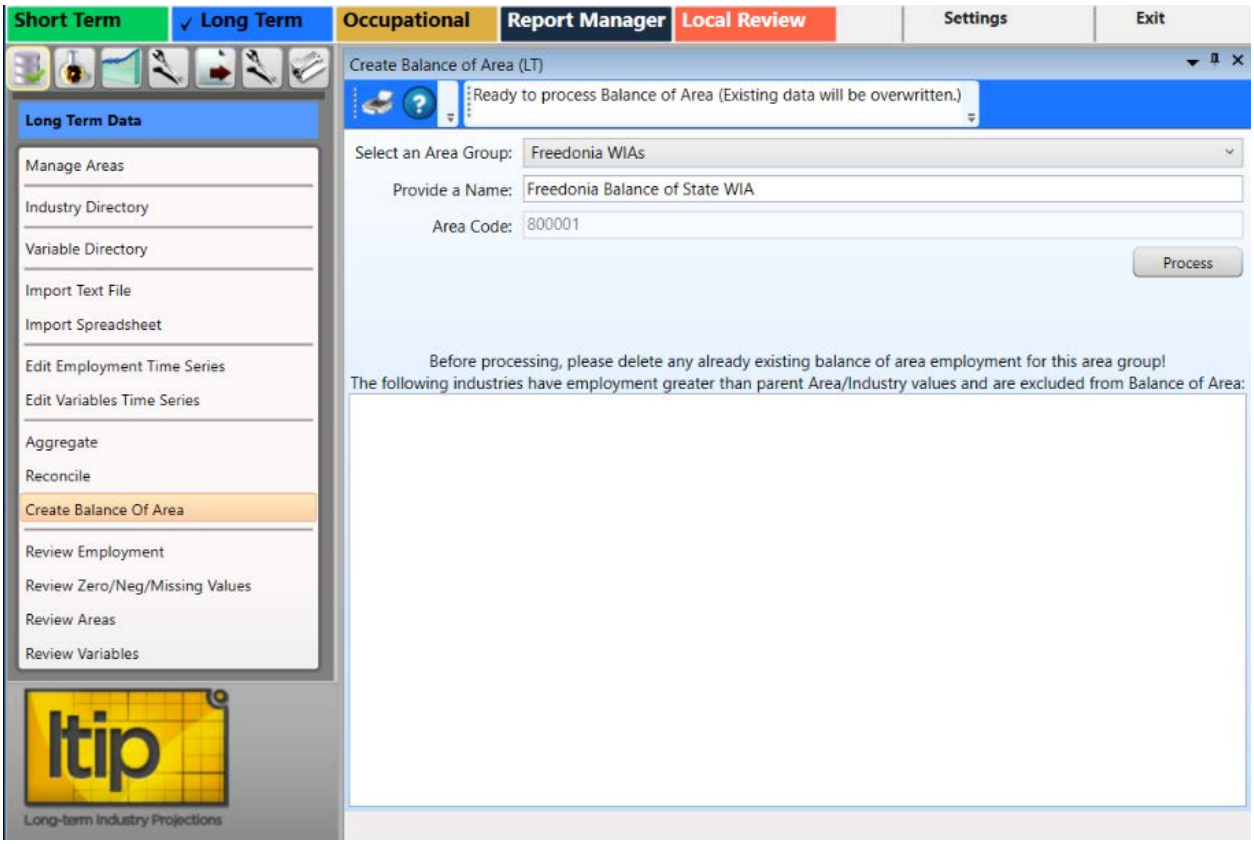


Figure 1: Create Balance of Area module, docked

Create a Balance of Area

1. Click the **Create Balance of Area** menu option. The **Create Balance of Area** screen will open in an undocked window.
2. **Select an Area Group** from the drop-down menu.
3. Type a name for the new area in the **Provide a Name** input field.
4. Type a valid **Area Code** into the input field. The area code must be 6 digits in length. The **Process** button will be enabled.

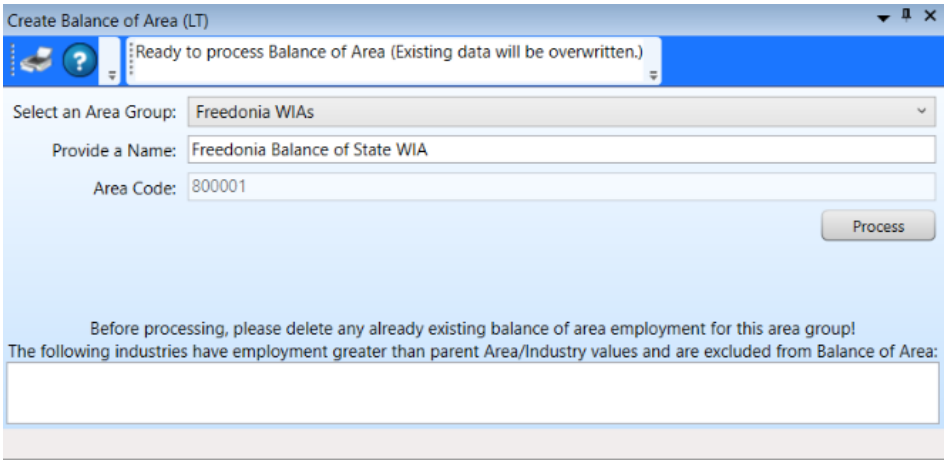


Figure 2: Preliminary information entered, Process button unlocked

5. Click the **Process** button. For each industry at the parent area level (for example, the state level), the software sums all of the employment in the industry in each of the sub-state areas that already exist in the group. It then subtracts that sum from the state employment and creates a new industry record. The record is the difference between the state employment and the sum of the non-balance of area sub-state employment. This new employment value is assigned to the Balance of Area. The system will do this for each year when accessed through Long Term Industry Projections and for each month when accessed through Short Term Industry Projections.

When processing is finished, the BOS Processed dialog box will be displayed.

Figure 3: Number of records processed

6. Click **Yes** to save the Balance of Area records to the database. Click **No** to cancel the save.

After the values have been saved, any industries with sums greater that the group total (which have been excluded from the saved values) are noted in the bottom section of the **Create Balance of Area** screen.

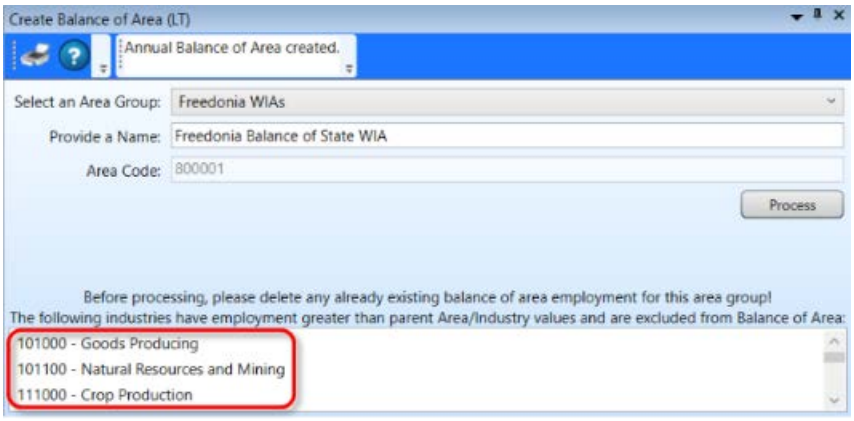


Figure 4: All records saved; highlighted industries were not

You can view the new industry employment data in the Long Term Edit Employment Time Series module.

Related Content

- Manage Areas

Review Employment

Use the **Review Employment** module to perform a quality check on the historical data series for industries in a specified area. With the quality check, you are able to identify potential problems in the data series.

Prerequisites that must be completed prior to using this module are:

- Run the area set up using the Manage Areas module.
- Import Monthly Employment Data using the Import Text File or Import Spreadsheet modules.

Screen Controls

- **Select an Area** drop-down menu
- **Show / print flagged records only** check box
- **Process** Button
- **Employment Table** tab
- **Time Series Endpoints** tab
- **Missing Industries** tab
- **Missing Industries (Substate)** tab

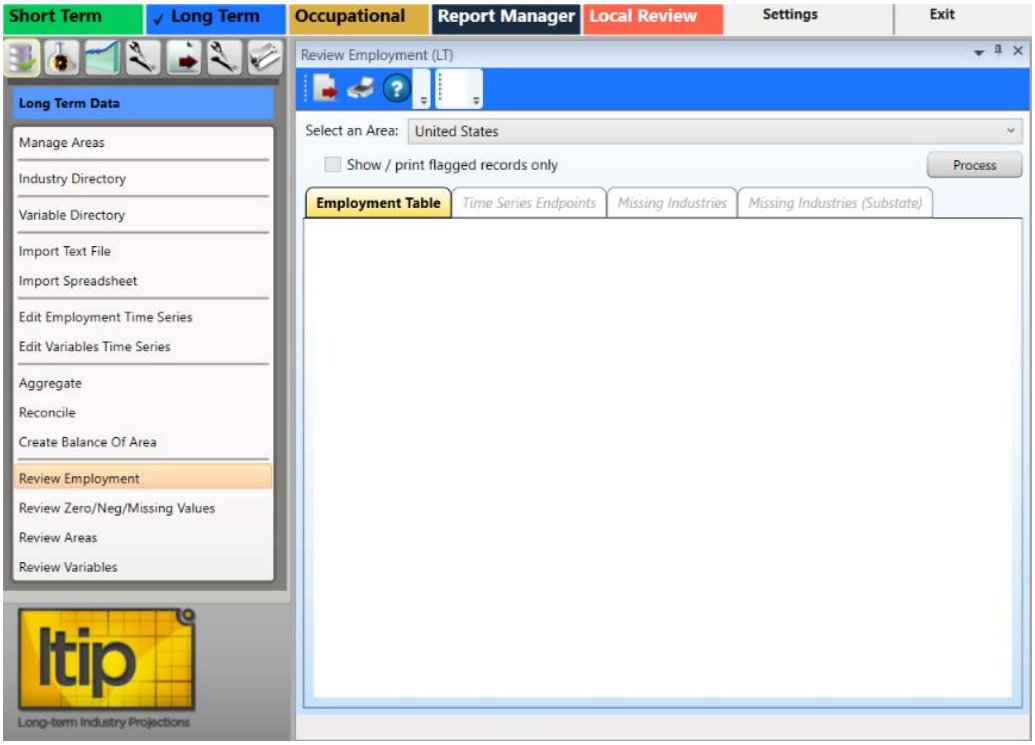


Figure 1: Review Employment module

Review Historical Data

1. **Select an Area** from the drop-down menu.
2. Click the **Process** button. You only need to click **Process** once for each selected area; information on all tabs processes simultaneously. When processing is complete, industry information displays in the Employment Table, Time Series Endpoints, Missing Industries, and Missing Industries (Substate) tabs. Select the tabs to review the information.

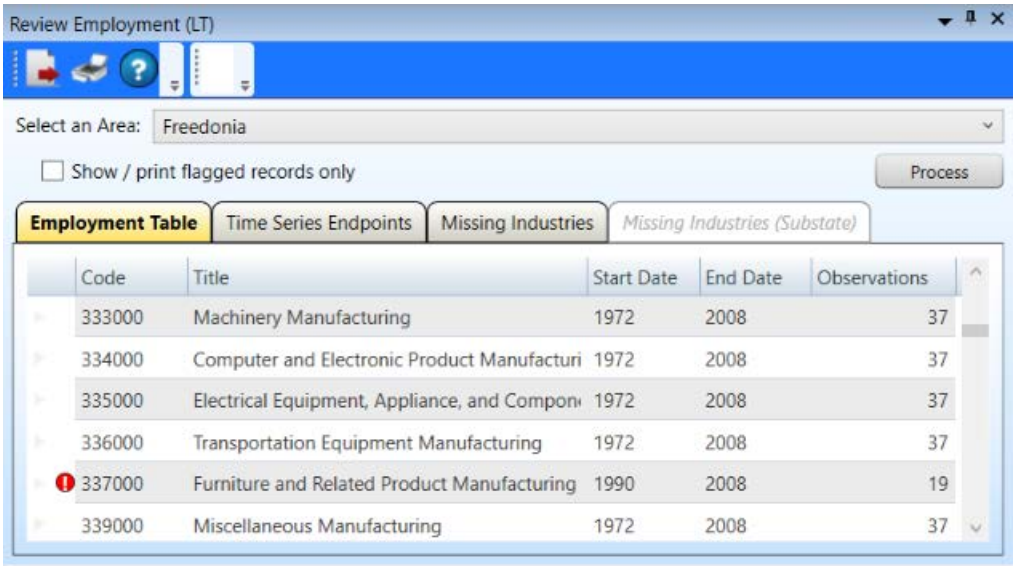


Figure 2: Displaying data and flagged records

Flagged records ❗ contain data inconsistencies. To view only the flagged records, click the **Show / print flagged records only** check box. These records can be corrected using the Edit Employment Time Series module. Return to the **Review Employment** module and click **Process** to reprocess the data, or import any missing data and reprocess. Flags are used as a warning to identify potential problems, but do not necessarily need to be removed to continue.

☞To sort the fields, click the field heading. For example, to sort by Title, click the Title heading.

View the Time Series Endpoints

1. Click the **Time Series Endpoints** tab.

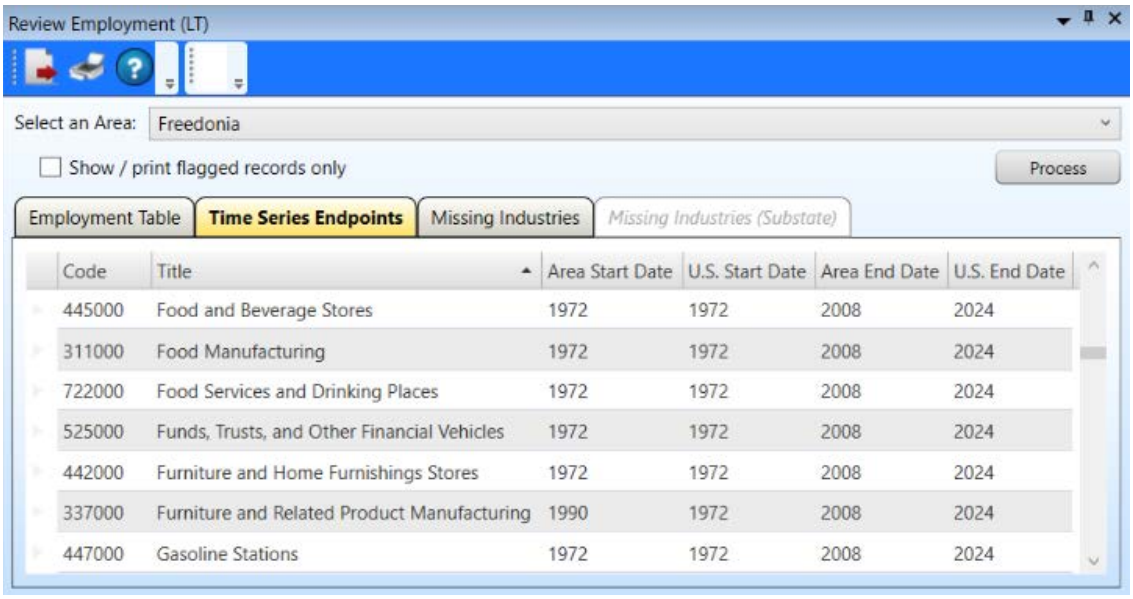


Figure 3: Time Series Endpoints tab

View Missing State Industries

1. Click the **Missing Industries** tab. The Missing Industries tab will display a list of industries that are found in the U.S. but not in the selected area. This will help to identify potential problems.

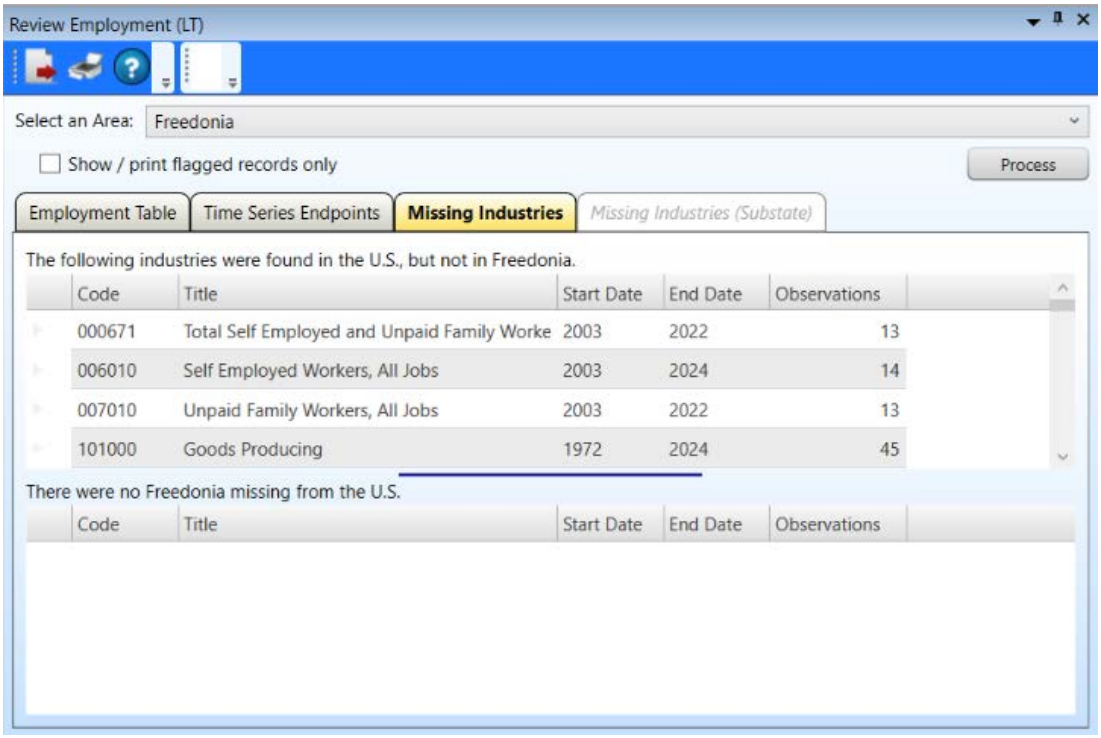


Figure 4: Missing Industries within the selected area

Display Missing Industries in a Sub-state Area

1. **Select an Area** from the drop-down menu. The selected area must be a sub-state area or the Missing Industries (Substate) tab will not be available.
2. Click the **Process** button.
3. Click the **Missing Industries (Substate)** tab.

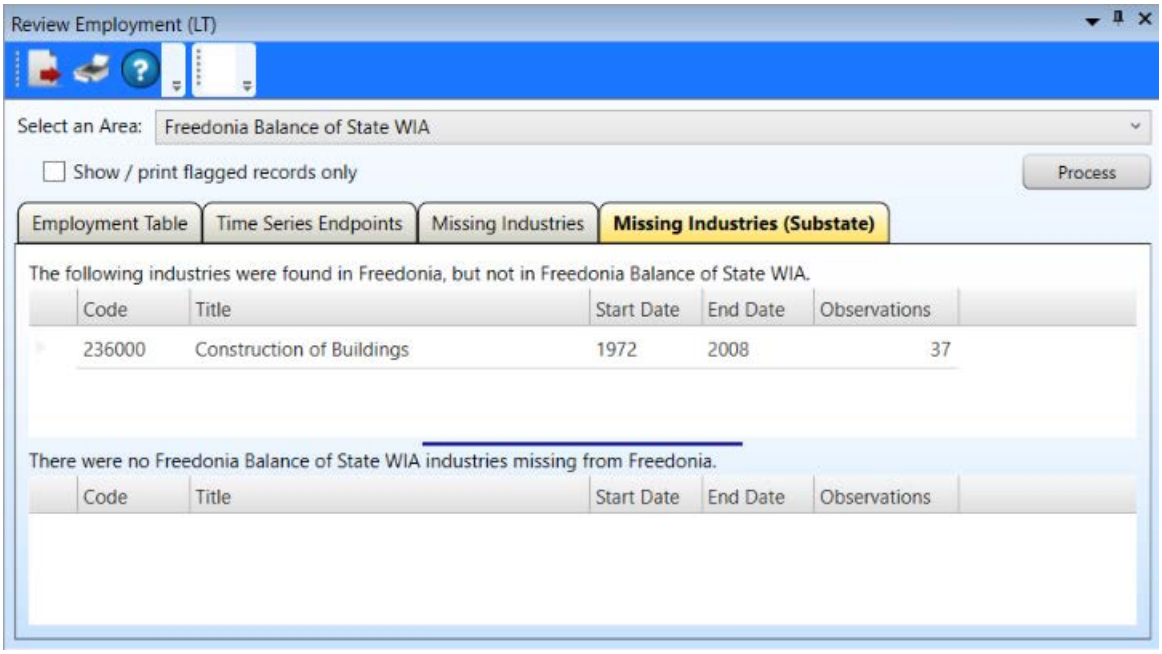


Figure 5: Missing Industries (Substate) tab

☞The Missing Industries (Substate) tab will display a list of industries found in the state, but not found in the selected sub-state area.

Related Content

- Edit Employment Time Series

Review Zero/Neg/Missing Values

The **Review Zero/Negative/Missing Values** module allows the viewing of industries, in the selected area, which have employment levels that are zero, negative, or are missing values. This identifies errors in an employment data series.

Prerequisites that must be completed prior to using this module are:

- Run the area set up using the Manage Areas module.
- Import the Monthly Employment Data using the Import Text File or Import Spreadsheet modules.

Screen Controls

- **Select an area** drop-down menu
- **Beginning Date** spinner
- **Base Year** field
- **Show only exceptions from base period** check box
- **Process** button

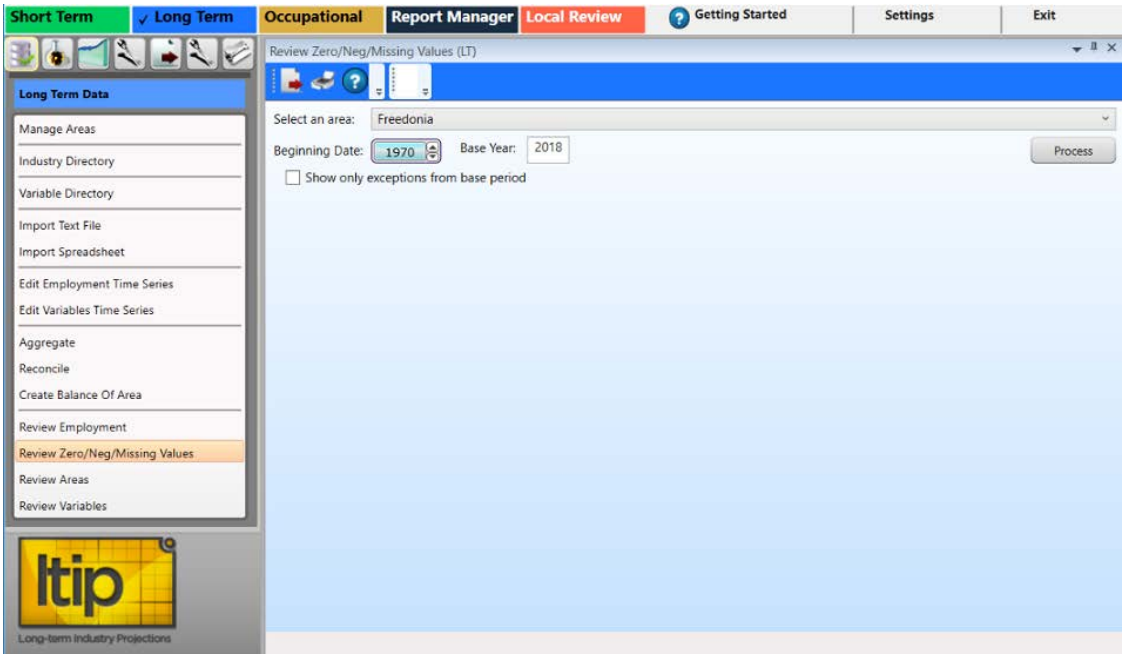


Figure 1: Review Zero/Negative/Missing Values module

Review Zero/Negative/Missing Values

1. **Select an Area** from the drop-down menu.

2. Click the **Beginning Month/Year** spinner to set the **Beginning Month and Year**.

- In Long Term Projections, a Base Year field is available. The Base Year should be the projected year, minus 10 years. To change this setting, click **Settings** and go to the **Long Term** section. Change the **Base Year** and click **Save Changes**. Alternatively, double-click in the field and enter a new value.

3. Click the **Show only exceptions from base period** check box to filter results from the base period only.

4. Click the **Process** button. Industries with zero, negative, or missing values for the selected area and date are displayed.

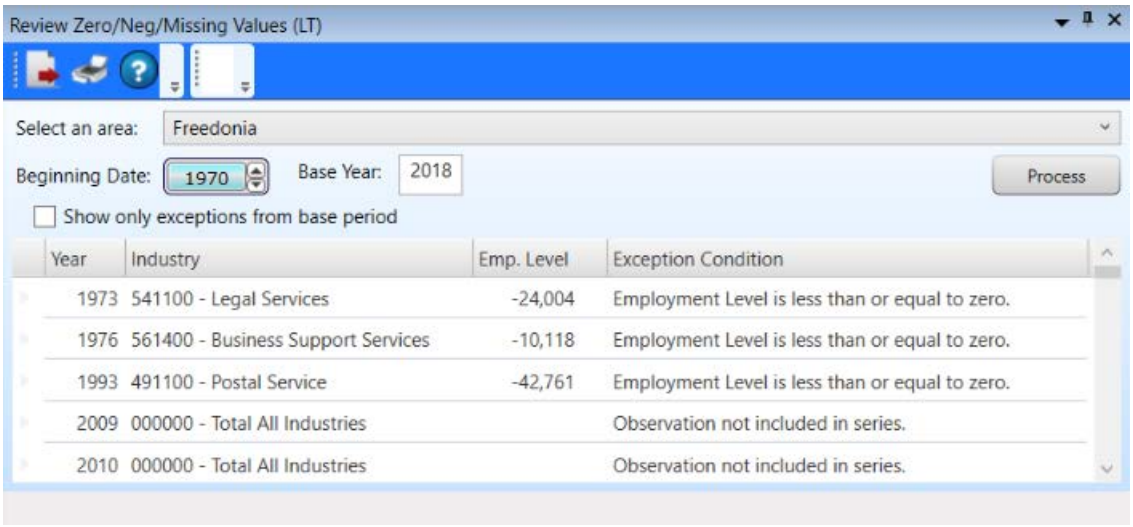


Figure 2: Zero/Negative/Missing Values displayed

To edit employment data, use the Edit Employment Time Series module. Then come back to the **Review Zero/Neg/Missing Values** screen and click **Process** to reprocess the data. You can also import any missing data and reprocess.

Review Areas

The **Review Areas** module compares Area Group information to identify potential problems found in the employment data series.

Prerequisites that must be completed prior to using this module are:

- Run the area setup and set up an Area Group using the Manage Areas module. Creating Area Groups allows for the comparison of information between a parent and child areas. This will help to determine if there are data problems.
- Import the Monthly Employment Data using the Import Text File or Import Spreadsheet screens.

The Review Areas module is available in the Short Term and Long Term applications. The same screen displays in each application. The Notebook is not available in the Long Term Review Areas module.

Screen Controls

- **Select an Area Group** drop-down menu
- **Process** button
- **Show / print flagged records only** check box

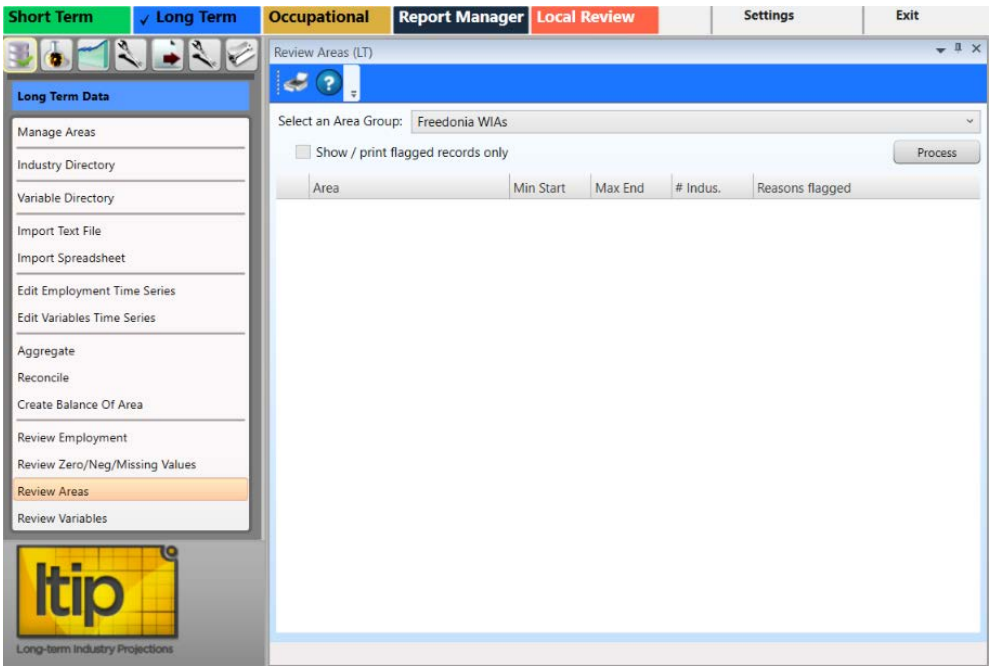


Figure 1: Review Areas module

Review Areas

1. **Select an Area Group**.
2. Click the **Process** button. When processing is complete, the results display.

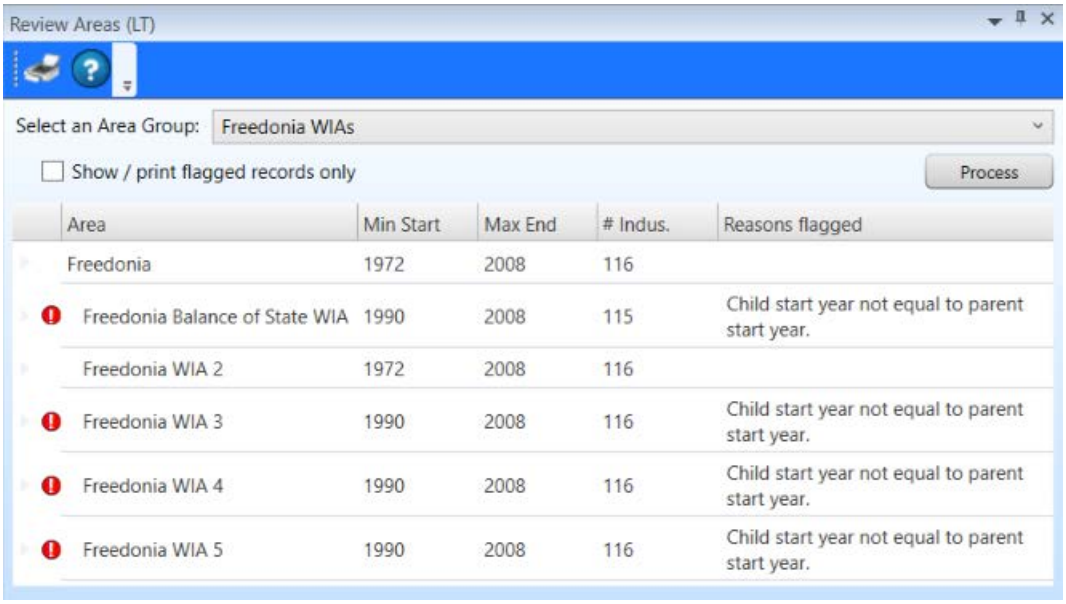


Figure 2: Discrepancies are listed in the Reasons Flagged column

Review starting dates, ending dates, and number of observations to make certain they are what is expected. A flag ❗ indicates there are issues with the record. In Figure 2, Freedonia WIA 3 contains more observations than the other areas. This information can help identify possible discrepancies.

Modify data as needed either using the Preview Employment module or by re-importing a corrected spreadsheet. When the number of industries is different in child areas than the parent area, the Review Employment (ST and LT) module can then be used to determine specifics of the discrepancies. Industries can be identified that are found in the parent area but not in a child area, and vice versa.

Once you have corrected any issues, return to this module and click **Process** to reprocess the data and verify there are no exceptions or that there is no concern for the exception.

Review Variables

Use the **Review Variables** module to review area-specific variables for any inconsistencies in the data series.

Prerequisites that must be completed prior to using this module are:

- Run the area setup using the Manage Areas module.
- Import the Monthly Variable data using the Import Spreadsheet module.

Screen Controls

- **Select Area** drop-down menu
- **Show / print flagged records only** check box
- **Process** button

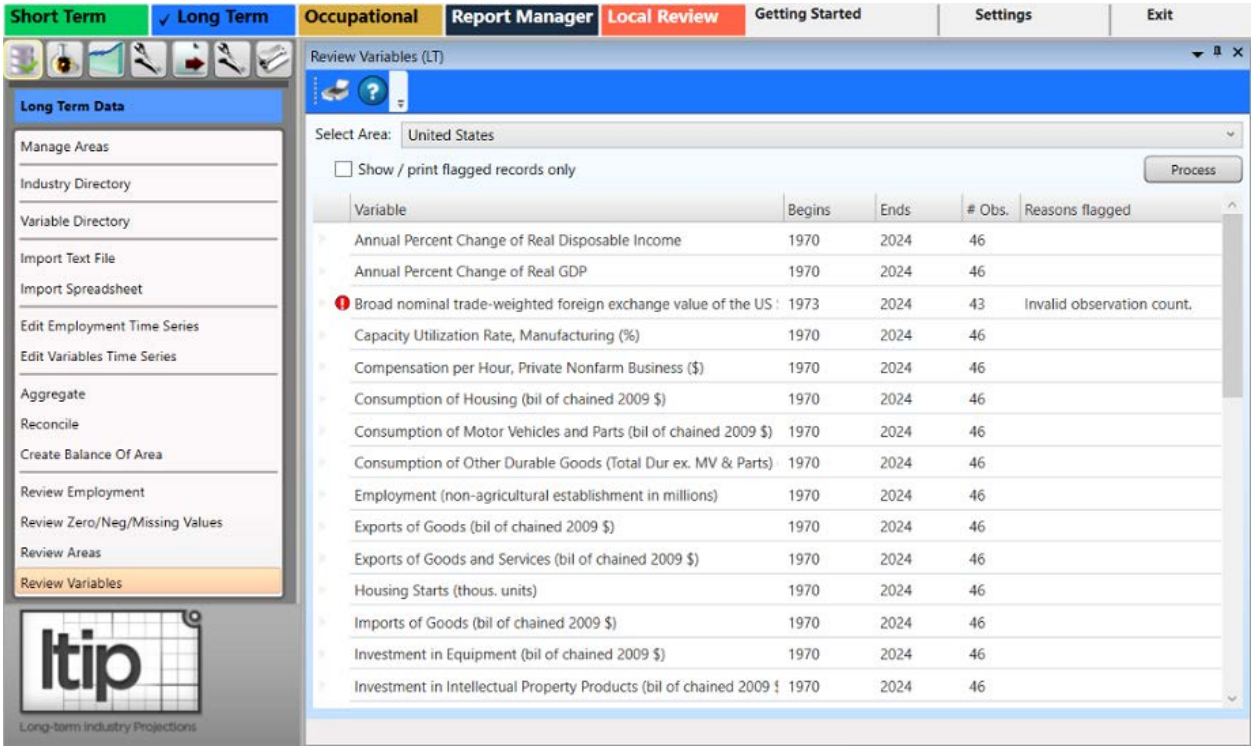


Figure 1: Review Variables module

Review Area-Specific Variables

1. **Select Area** from the drop-down menu.

2. Click **Process**. Variables for the selected area display. Flagged records contain data inconsistencies and their discrepancies listed in the **Reasons flagged** column.

☞To view only flagged records, click the **Show / print flagged records only** check box.

Related Content

- Dummy Variables (LT)

Long Term Analysis Menu Items

Long Term Analysis Introduction

The **Long Term Analysis** group menu allows the analyzing of data for industry and employment statistical reports.

Figure 1: Long Term Analysis group menu

The Long Term Analysis group menu contains the following selections:

- Outliers
- Employment Series Analysis
- Industry Mix
- Ratio Variables
- Dummy Variables
- Standard Transformations
- Arithmetic Transformations

Outliers

Outliers are data that deviate from normal seasonal fluctuations. An outlier is a point in a time series that has a value different enough from the points immediately surrounding it to raise questions about that point's validity.

Outliers may occur for several reasons:

- Errors in the data.
- Very small data values causing relative fluctuations.
- Economic upturns or downturns reflected in employment values rising or falling suddenly.

It is the analyst's responsibility to decide the cause of a particular outlier's presence in an employment series. The software cannot make that decision. However, the Outlier module provides the tools to search for possible outliers and to suggest possible alternative values.

The Outlier module is duplicated in the Short and Long Term applications. The only difference is Short Term displays monthly data in addition to yearly data. The Long Term Outliers module will calculate yearly data only.

Screen Controls

- **Settings** tab
  - **Select Areas** drop-down
  - **Analyze All Areas** check box
  - **Three times the interquartile range or greater** radio button
  - **Two standard deviations from the differenced mean or greater** radio button
  - **Absolute magnitude difference of 1200 or greater** radio button
  - **Top 100 by absolute differenced from the differenced median** radio button
- **Time Series Plot** tab
  - See the Time Series Plot Tab section
- **Transformed Time Series Plot** tab
  - See the Transformed Time Series Plot Tab section
- **What's an outlier** button
- **Change Default Outlier Magnitude** button
- **Change Default Outlier Count** button
- **Find Outliers** button

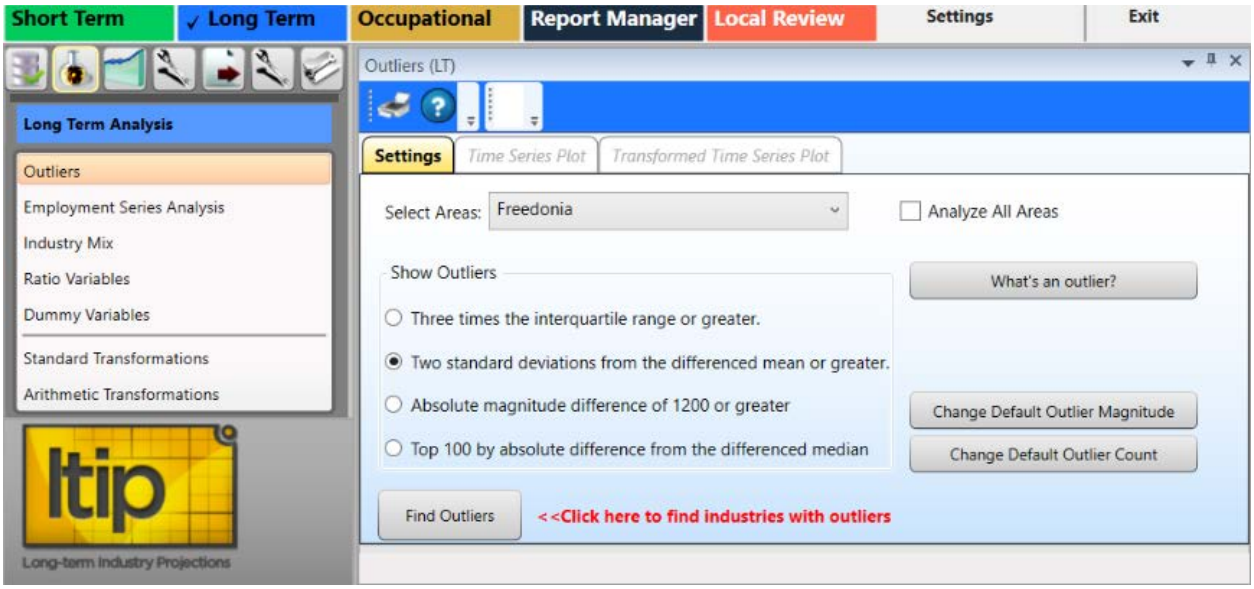


Figure 1: Outliers module

Prepare Outlier Processing

1. Select an area from the **Select Areas** drop-down menu, or check **Analyze All Areas** box.
2. Select a **Show Outliers** radio button.

☞To display the Outlier Detection Methodologies explanation, click the **What's an outlier** button.

Outliers to show include:

- **Three times the interquartile range or greater**.
  - This option calculates quartiles for the differenced series at the 25th, 50th, and 75th percentile. The difference between the 75th and 25th percentile is called the interquartile range. The system flags any industries with points on the differenced series that are more than three times the interquartile range, above the 75th percentile or below the 25th percentile.
- **Two standard deviations from the differenced mean or greater**.
  - This calculates the standard deviation from the mean of the differenced series, then flags any industries with points on the differenced series that are more than two standard deviations above or below the mean.
- **Absolute magnitude difference of 1200 or greater**.
  - This flags any industries with points on the differenced series that have an absolute value above a specific setting. The default magnitude to compare against is 1,200.

☞Click the **Change Default Outlier Magnitude** button to set a different absolute magnitude difference.

- **Top 100 by absolute difference from the differenced mean**.
  - This ranks all differenced points for all industries by the absolute value of their differences from the median of the differenced series, then flags any industries that have points in the top portion of the list. By default, the top 100 points measured by absolute difference are selected.

☞Click the **Change Default Outlier Count** button to set a different number of points to return.

3. Click the **Find Outliers** button. When the outlier calculations are complete, the view will be switched to the **Time Series Plot** tab to display the results.

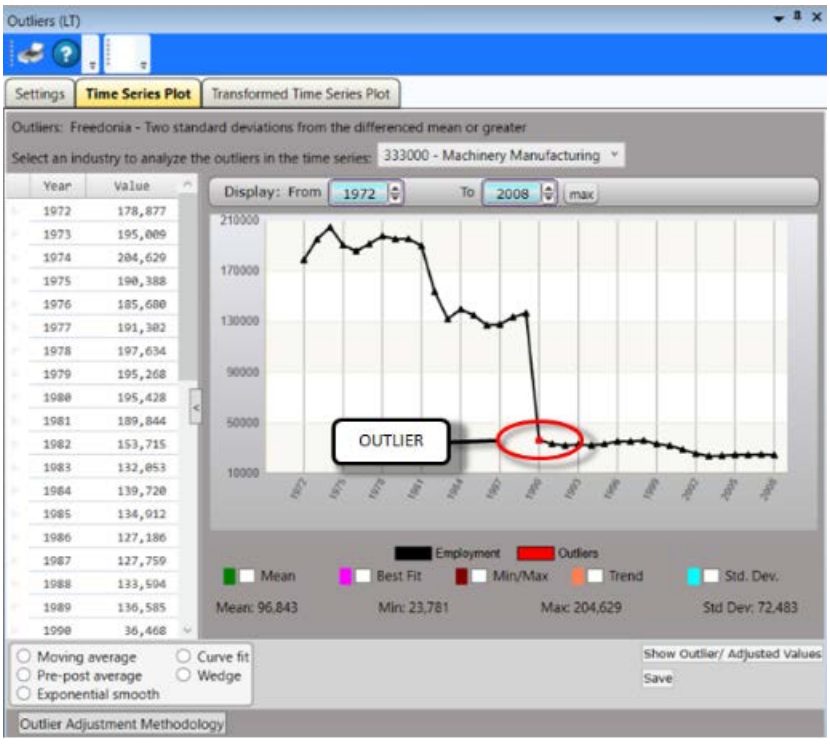


Figure 2: The Time Series Plot tab displays

Red dots indicate the calculated locations of outliers. If there are no outliers within the chosen criteria, the Time Series Plot tab will not display.

The **Transformed Time Series Plot** tab will also be unlocked after clicking the **Find Outliers** button:

Related Content

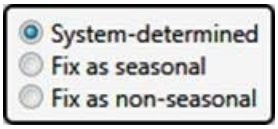
- Time Series Plot Tab
- Transformed Time Series Plot Tab

Time Series Plot Tab

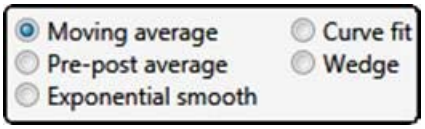
The Time Series Plot tab displays the outlier information you initially selected in the Outlier module. At the top of the screen, the area and type of outlier is displayed.

Screen Controls

- **Select an industry** drop-down menu
- **Display date** spinner
  - **Max** button
- **Graph Enhancement Controls**



- **System-determined** radio button
- **Fix as seasonal** radio button (selecting this option will unlock the **Seasonality Plot** tab)
- **Fix as non-seasonal** radio button



- **Adjustment Options**
  - **Moving average** radio button - This option takes the average of the preceding three months (default) as the new value for an outlier point. It will display a **green dot** on the graph as the suggested value.
    - **Select number of months (or years in Long Term)** drop-down
  - **Pre-post average** radio button - This option averages the values of the points immediately before and after the outlier points.
  - **Exponential smooth** radio button - This option displays the R-Squared value of the smoothing equation, which can help determine the validity of the adjusted values.
  - **Curve fit** radio button - This option displays the R-Squared value for use in fitting a first-degree linear equation to the time series or a second-degree polynomial equation.
    - **Select degree of equation** drop-down
  - **Wedge** radio button - This option requires two outlier points for calculation. The system draws a straight line between the point immediately before the first outlier and immediately after the last outlier. This causes the interpolation of the outlier points as well as the intermediate values.
    - **Start point (anchor)** date spinner
    - **End point (value)** date spinner

- **Show Outlier/ Adjusted Values** button
- **Outlier Adjustment Methodology** button - opens a document which explains the moving average, pre-post average, exponential smooth, curve fit, and wedge methodologies/adjustments in more detail.
- **Save** button - This button replaces the outlier values with new values, based on the methodology chosen.

Configure Outlier Data on the Time Series Plot Tab

1. Select an industry from the **Select an industry to analyze the outliers in the time series** drop-down menu.
2. Check one or more of the Graph Enhancement Controls, if desired.

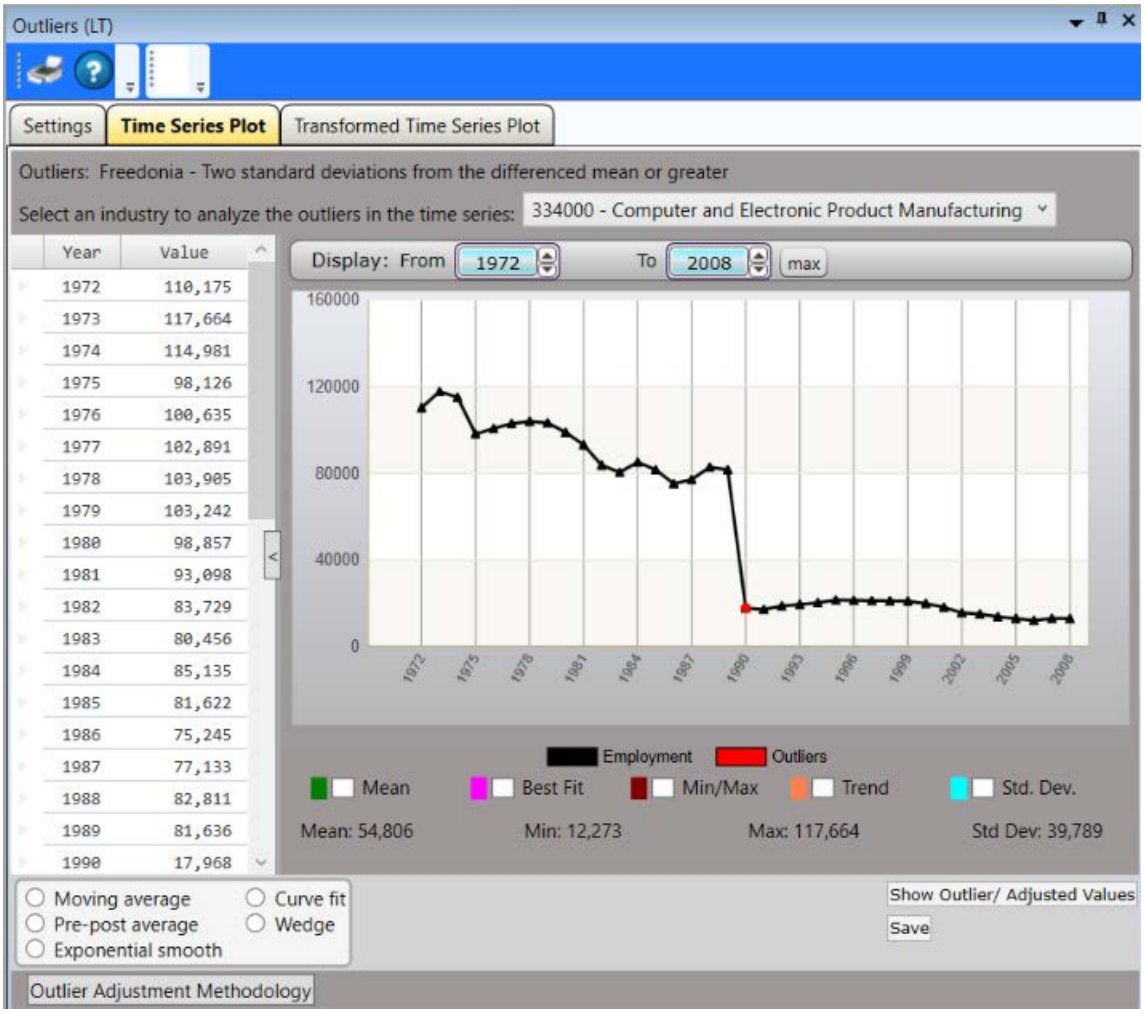


Figure 1: Time Series Plot tab with the Trend Graph Enhancement Control

3. Set the time frame using the **Display date** spinner. Years are available in Long Term.

- Click the Max button to automatically set the longest time frame possible. It is also possible to select chart dates with the mouse to examine them in greater detail.

4. When choosing either the **Fix As Seasonal** or **Fix As Non-Seasonal** radio buttons, a dialog box will be displayed asking if the outlier points for this industry should be recalculated or not. Select the appropriate response.

5. Select an **Adjustment Option** radio button (if desired).

6. Click the **Show Outlier/Adjusted Values** button to view detailed information about the chosen industry. The outlier values will be opened in a new window:

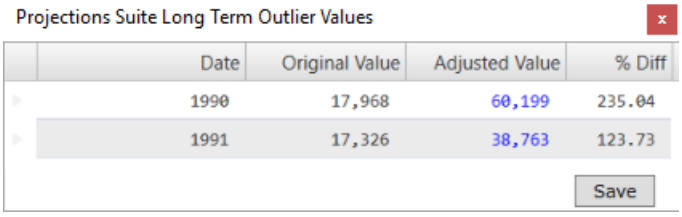


Figure 2: Outlier/Adjusted Values with Wedge selected

7. Click the **Save** button.

☞Click the **Outlier Adjustment Methodology** button to view how the adjustments were calculated. The **Outlier Adjustment Methodologies** document will open in a new window.

Edit the Data Grid

The data grid displays the data series dates and Values in a column to the left of the graph. To edit the data grid:

1. Highlight the row you want to adjust.
2. **Right click** and select **Add**, **Edit**, or **Delete** to adjust the values in the graph.

Related Content

- Outliers
- Transformed Time Series Plot Tab

Transformed Time Series Plot Tab

The **Transformed Time Series Plot** displays the outlier information you selected in the Outlier module. It graphs the differenced series and shows where differenced points lie outside the outlier definition. The Transformed Time Series Plot tab displays two red lines indicating the value based on the Show Outlier definition chosen on the Settings tab. Any points where two values rise well above or below the red line are marked as outlier points on the Time Series Plot tab.

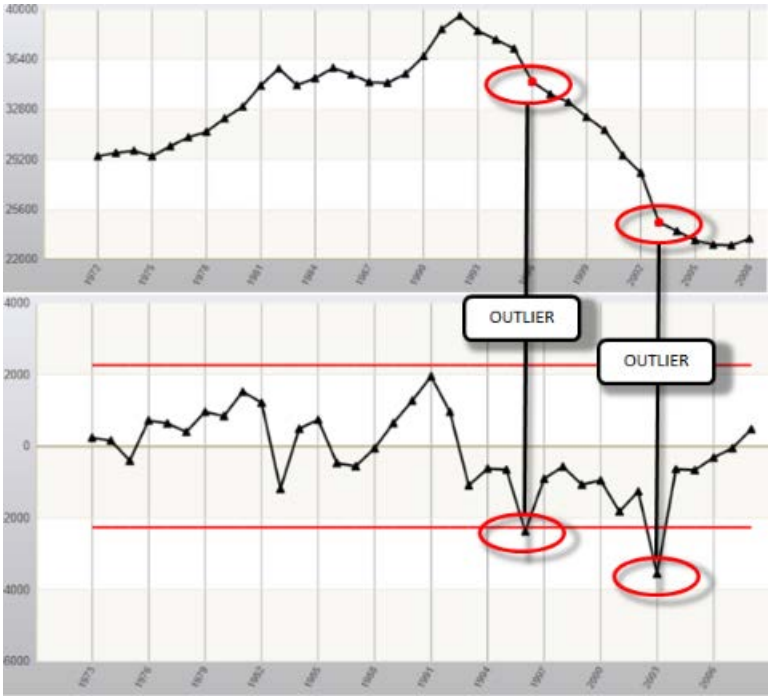


Figure 1: Time Series Plot (top) and Transformed Time Series Plot (bottom) outlier correlations

At the top of the page, the area and type of outlier is displayed. The date and Value display in the data grid on the left. The graph displays the industry data.

Figure 2: Transformed Time Series Plot tab

1. Set the time frame using the **Display** date spinners.

- Click the **max** button to automatically set the longest time frame possible.

☞Outliers are highlighted in red in the data grid on the left.

Related Content

- Outliers
- Time Series Plot Tab

Employment Series Analysis

The **Employment Series Analysis** module provides a statistical overview of historical employment for an industry and area, including location quotients, R-Squared values, and various graphical analyses.

Screen Controls

- **Select an Area** drop-down menu
- **Select an Industry** drop-down menu
- **Employment vs. Time** tab
- **Area/National Ratio** tab
- **Area vs. National Employment** tab
    - **Show All** button
- **Display** date spinner
    - **Max** button
- **Reference area** control group (appears only when a sub-state area is selected)
    - **U.S.** radio button
    - **State** radio button
- **Batch** button
- **Graph Enhancement** controls

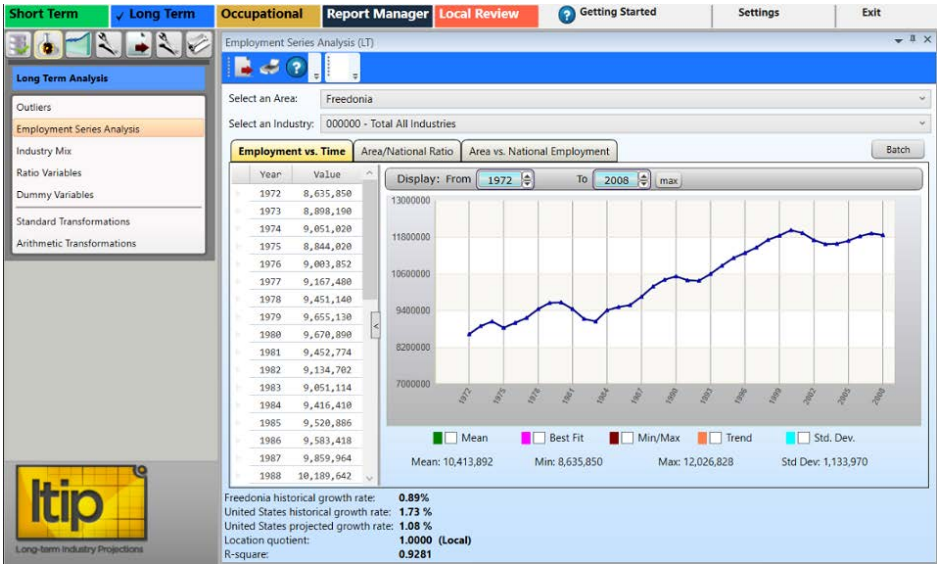


Figure 1: Employment Series Analysis module

Analyze Employment Series

1. **Select an Area** from the drop-down menu.

2. **Select an Industry**. The graph displays analysis for the industry, in the selected area.

3. Set the time frame by using the **Display** date spinners. You can use the mouse to select chart dates, to view the information in more detail. Use the Graph Enhancement controls, if desired.

- Click the **Max** button to view the maximum possible time frame.

Information displays below the graph. The bar contains:

- Historical Growth Rate of the selected area
- United States historical growth rate
- United States projected growth rate
- Location quotient
- R-square

4. Click the **Batch** button to export the Employment Series Analysis Batch. You can select to export by printed report or by Excel spreadsheet. This will produce a printed document or spreadsheet that lists industries, area historical growth rate, U.S. historical growth rate, U.S. projected growth rate, location quotient, and R-square values.

Area/National Ratio Tab

1. Click the **Area/National Ratio** tab. The corresponding graph will display the ratio that the selected industry for the area represents when compared with the national employment for the selected industry.

Figure 2: Area/National Ratio tab

Area vs. National Employment Tab

1. Click the **Area vs. National Employment** tab. The corresponding scatter plot displays the employment values for the selected industry/area, and the value for the national employment for the selected industry. The scatter plot will show the extent of correlation between points of the selected industry/area versus nation or state, depending on which options are selected. If no correlation exists between the points, the points appear randomly scattered on the coordinate plane. If a large correlation exists, the points concentrate on a straight line. The scatter plot will help visualize the trend to see if the area trend is similar to the national or state employment for the selected industry.

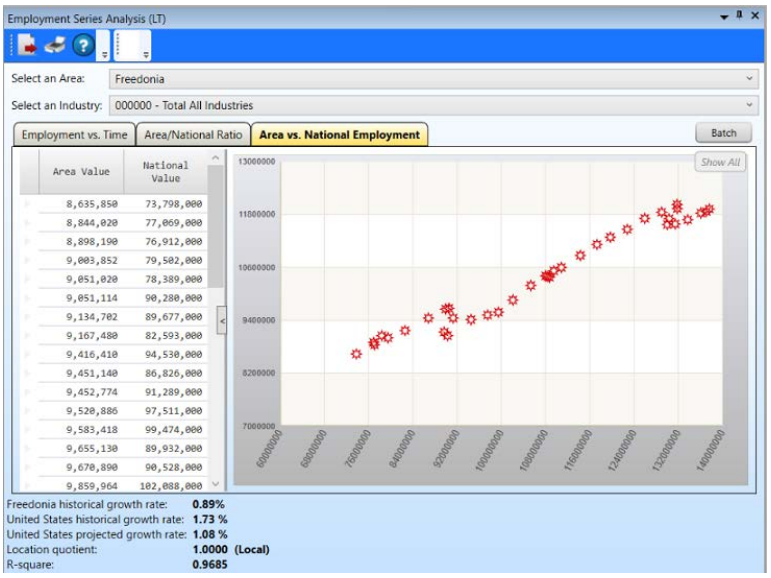


Figure 3: Area vs. National Employment tab

2. Hover your cursor over a point on the graph to display its corresponding values.

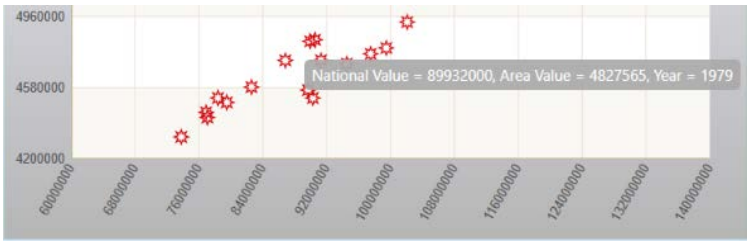


Figure 4: Hovering mouse on a plotted point

3. Click a point on the graph to display the data from the start of the value pairs to the point selected. Click the **Show All** button to display all of the data.

Industry Mix

Use the **Industry Mix** module to view comparisons of the distribution of employment within an industry sector, for an area with employment in that same industry family, against the United States. The performance of this module depends on the presence of sector (2-digit) and/or four-digit historical data series in your database.

Screen Controls

- **Select an Area** drop-down menu
- **Select an Industry Level** radio buttons
  - **2-digit (Sector)** radio button
  - **3-digit** radio button
- **Select a year** spinner
- **Select an Industry** drop-down menu

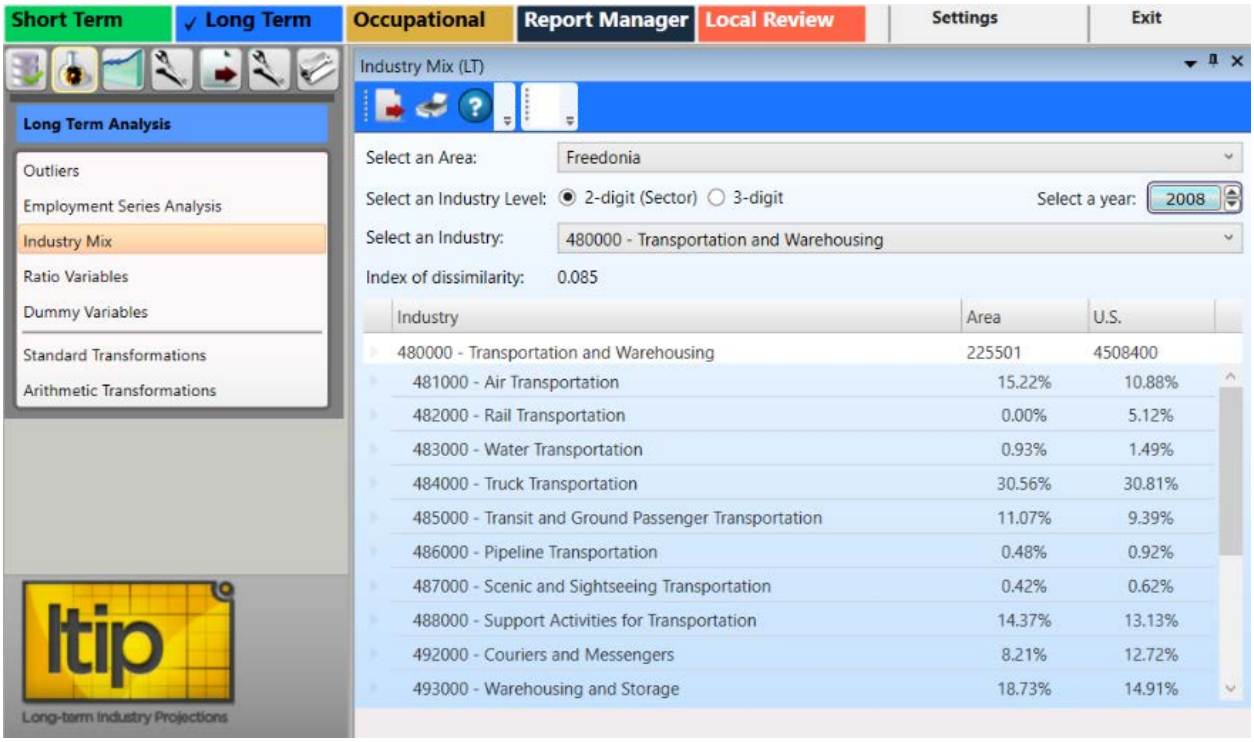


Figure 1: Industry Mix module

Compare the Distribution of Employment

1. **Select an Area** from the drop-down menu.
2. **Select an Industry Level** radio button to select the NAICS level to use in the comparison.

- 2-digit (Sector) - used to analyze three-digit industry breakdowns within sectors.
- 3-digit - used to analyze four-digit industries within three-digit industries.

3. **Select a year** with the spinner.
4. **Select an Industry** from the drop-down menu.

The **Index of dissimilarity** displays above the table. This is a number between zero and one. A value of zero means that the industry breakdowns at the area and national level are identical. A value of one means they are completely dissimilar. In practice, a value of one is almost never achieved.

Related Content

- Reconcile

Ratio Variables

The **Ratio Variables** module allows the analysis of five preset variable and/or employment ratios used in OLS predefined models. The ratio is a historical time series created by dividing the data values in one variable by the values in a second variable (displayed in the Ratio Variable drop-down menu). This creates a new time series for which each data value is the ratio of two variable data values for equivalent years. For example, you could create a per capita income variable by dividing the variable for total income by the value for population. The predefined OLS regression models supplied with the Long Term Industry Projections application depend, in part, on system-defined ratio variables. This module allows you to review these variables.

Configuring your Variable Directory is a prerequisite to running the Ratio Variables module, to prevent error generation. You must set valid Population and Personal Income (Pop/PI) variables. If these variables are not set, the Ratio Variables module will not run correctly.

Screen Controls

- **Select an area** drop-down menu
- **Ratio Variable** drop-down menu
- **Grid column to graph** drop-down menu
- **Show Projected Value** check box
- **Display** date spinners
    - **Max** button
- **Graph Enhancement** controls

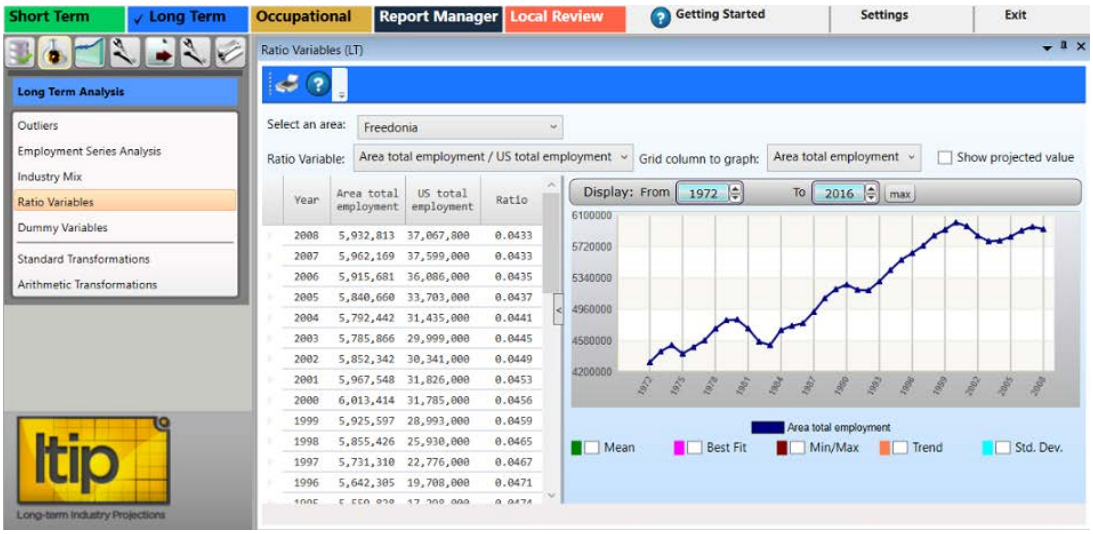


Figure 1: Ratio Variables module

View Ratio Variables

1. **Select an area** from the drop-down menu.
2. Select a **Ratio Variable**. The options are:

- Area total employment / US total employment
- Area population / US population
- Area personal income / US personal income
- US industry employment / US total employment
- US industry employment / US population

3. Select a **Grid column to graph** from the drop-down menu. This will alternate the metric used on the y-axis of the graph.

4. Select a time frame using the **Display** date spinners. Selecting a value for an area, Ratio Variable (and optionally, Select an Industry), Grid column to graph, and time frame displays their data in the chart.

- Click the **Max** button to restore the full range of the graph.

5. Click the **Show projected value** check box to include projected values in the chart and data grid.

6. Utilize the Graph Enhancement controls, if desired.

Edit Ratio Variables

1. **Right click** the table on the left to open a context menu.

- Add values by selecting **Add** from the context menu. Type the values and press **Enter** to save them. Right click to **Cancel Add**.
- Edit values by selecting **Edit**. All fields are able to be edited except for the Ratio field.
- Delete a value by selecting **Delete**.

Related Content

- Variable Directory

Dummy Variables

Use the **Dummy Variables** module to create, modify, or delete dummy variables. Dummy Variables are used to compensate for unusual events that affect an historical series.

Dummy variables are used when there is a major discontinuity in a data series. For example, if there were a coding change at a specific time, the dummy variable would represent the change in that point in time. Create dummy variables to represent key events at a point in time or to represent a series of data points for a specific period. For example, an analyst may want to contrast differences in the economy after a new tax law was passed, during hurricane recovery efforts, or after a major business center was built in an MSA. Dummy variables are available for use by some models to affect the projected values for industries.

The LTIP application includes a dummy variable to distinguish a 1990 break in the Industry Employment Time Series, resulting from the conversion from SIC to NAICS.

Screen Controls

- **Associated Area** drop-down
- **Select Variable** drop-down
- **Add** button
- **Delete** button
- **Save** button
- **Cancel** button
- **Date** spinners
- **Add Values** button
- **Add Projected** button
- **Add Custom** button
- **ON** button
- **OFF** button
- **All ON** button
- **All OFF** button
- **Remove Value** button

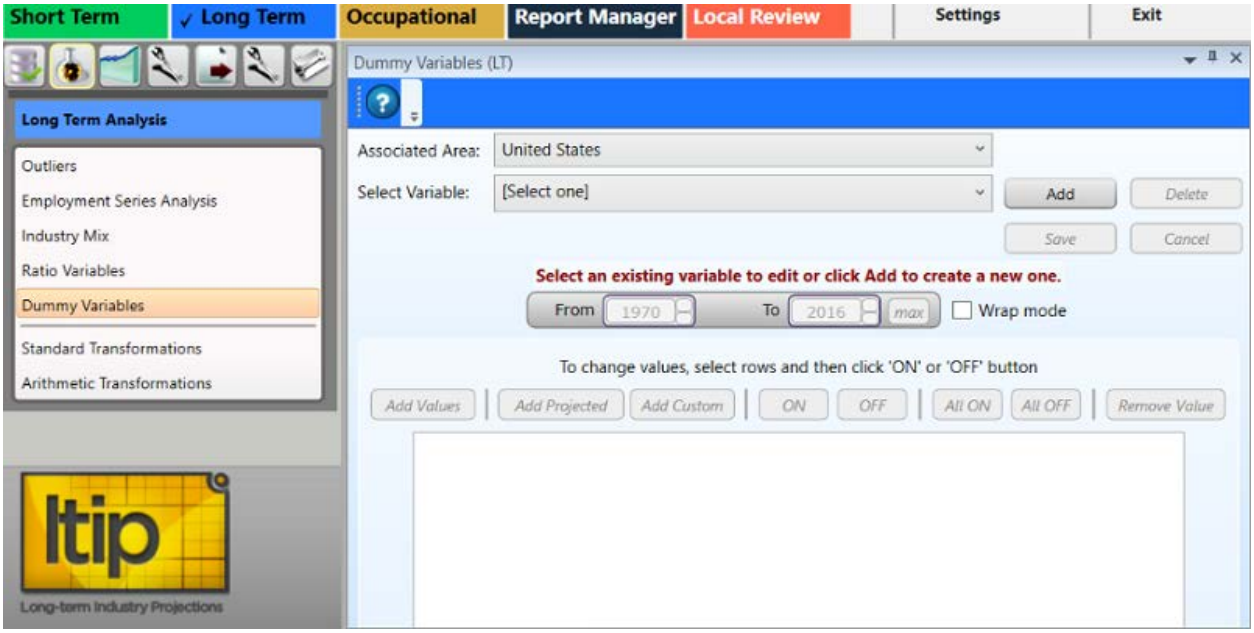


Figure 1: Dummy Variables module

View Variable Values

1. Select an area from the **Associated Area** drop-down menu.
2. Select a variable from the **Select Variable** drop-down menu. The values associated with that variable will be displayed.
3. Click the **Wrap mode** check box to view all the variable values in wrap mode. Wrap mode lists the values in rows and columns, instead of a single column.

Add a New Variable

1. Select an area you want to add the variable to from the **Associated Area** drop-down.
2. Click the **Add** button next to the Select Variables drop-down menu. The **Annual Dummy Variable** dialog box will be displayed.
3. Type a descriptive name for the new dummy variable.
4. Click **OK**. The new variable will be displayed in the **Select Variable** drop-down menu.

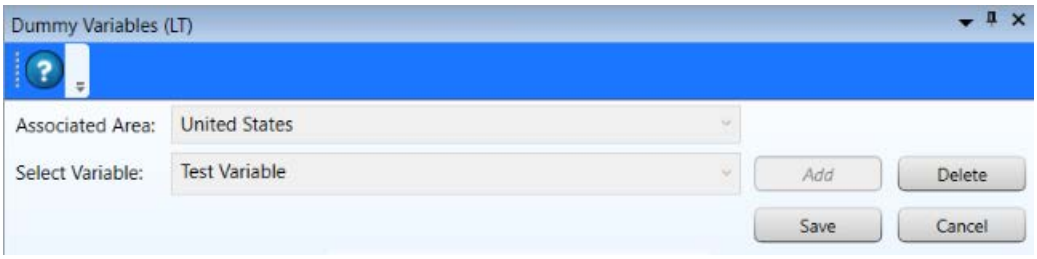


Figure 2: The new variable (Test Variable) displays

5. Set the time frame using the **date spinners**. Click the **Max** button to automatically set the longest time frame possible.

6. Click the **Add Values** button. A list of zero value variables will be added, reflecting the dates chosen with the date spinners.

Change Variable Values

1. Select the **Year** to change from the list of values.

- Click the **ON** button to turn the variable on for that year. On values indicate the period of the key event.
- Click the **All ON** button to turn the variable on for all years.
- Click the **OFF** button to turn the variable off for the selected year.
- Click the **All OFF** button to turn the variable off for all years.

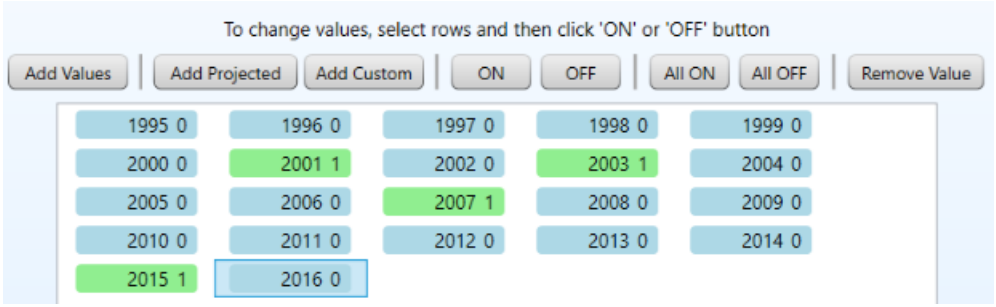


Figure 3: OFF values are blue, ON values are green

☞Multiple values can be selected at once. For assistance with selecting multiple variables at a time, click here.

2. When you are finished changing the variable's values, click the **Save** button. Click **Cancel** to cancel the creation of the dummy variable.

Add a Projected Value

1. Click the **Add Projected** button. A value will be added which corresponds to the value selected in the Settings menu, under the Long Term settings.

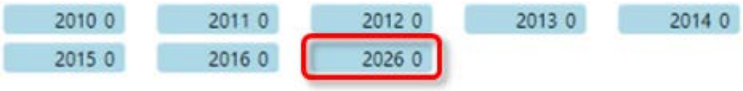


Figure 4: Projected value added

Add a Custom Value

To add a year not included in the dates initially created with the **Add Values** button:

1. Click the **Add Custom** button. The **Add Custom Date** dialog box will be displayed.
2. Type the **Year**.
3. Click **OK**. The date will be added to the values.

Remove a Variable Value

1. Select the value to delete.
2. Click the **Remove Value** button.

Delete a Variable

1. Select the **Associated Area** and **Select Variable** from the drop-down menus.
2. Click the **Delete** button. The Delete Annual Variable dialog box will be displayed.
3. Select **Yes** to delete the variable. Click **No** to keep the variable.

Related Content

- OLS Regression Models
- Review Variables (LT)

Standard Transformations

Use the **Standard Transformation** module to modify variables for a specific area and time frame. You can create a new variable from any kind of annual series in the system, from another variable, or from an employment series. This module allows the transformation of variables and/or employment in various industries.

Screen Controls

- **Select an Area** drop-down menu
- **Select a variable to transform** drop-down menu
- **Transform** control group
  - **Variable** radio button
  - **Employment** radio button
- **Display** date spinner
  - **Max** button
- **Select a transformation** control group
  - **Lag 1** radio button
  - **Lag 2** radio button
  - **Log** radio button
  - **Quadratic** radio button
  - **Reverse Quadratic** radio button
- **What would you like to graph?** control group
  - **Series** check box
  - **Transformed series** check box
- **Save transformed series** button
- **Graph Enhancement** controls

Figure 1: Standard Transformations module

Modify Variables

1. **Select an area** from drop-down menu.
2. Select a **Transform** radio button from the control group. There are two choices in the **Transform** radio button group:

- Variable
- Employment

The second drop-down menu will perform one of two functions, based on which Transform radio button choice is made. Selecting the **Variable** radio button causes the second drop-down menu to become a **Select a variable to transform** drop-down menu. Selecting the **Employment** radio button causes the second drop-down menu to become a **Select an Employment Series to transform** drop-down menu.

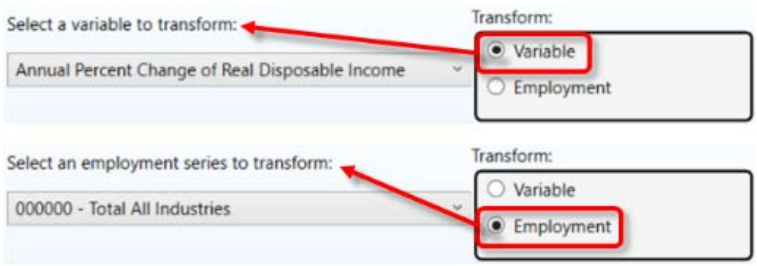


Figure 2: Select an option from the Transform control group

☞For most non-US employment series, you will not have a projected value. OLS regression models need a projected value for each input variable.

3. After selecting a Transform radio button, either **Select a variable to transform** or **Select an employment series to transform** from the drop-down menu.

4. For the transformation to be valid, a time frame must be set by using the **Display** date spinners.

- Click the **Max** button to automatically set the longest time frame possible.
- Chart dates can be selected with the mouse to examine them in further detail.

By selecting an area, Variable or Employment Series, and time frame, the data will display in the graph:

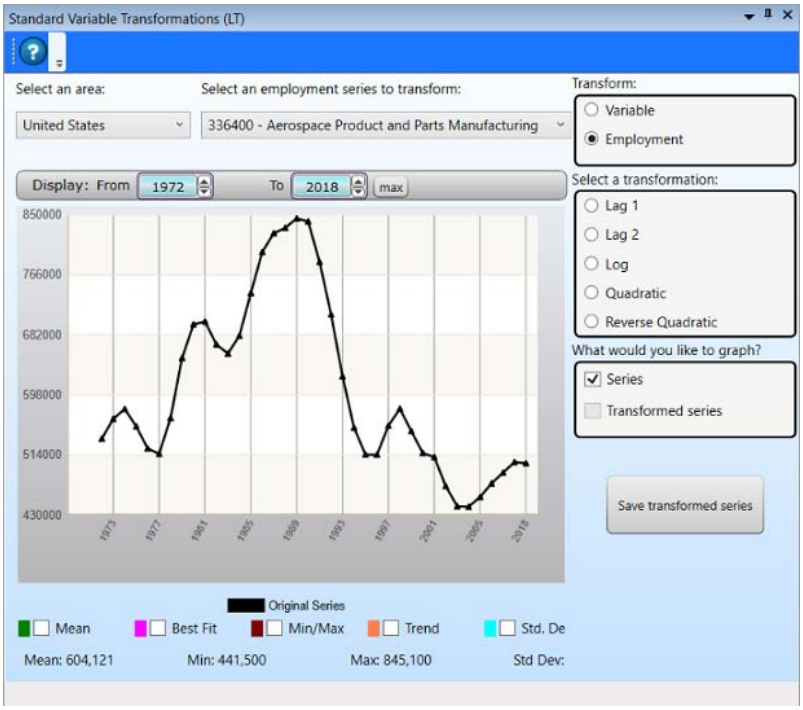


Figure 3: Selected criteria are displayed in the graph

5. Use the Graph Enhancement Controls, if desired.

6. When selecting transformations, use the **What would you like to graph** control group to view the **Series**, **Transformed series**, or the two together.

Select a Transformation

1. **Select a transformation** from the control group.

Transformation - **Lag 1**

- Moves the value from a particular year to the following year.

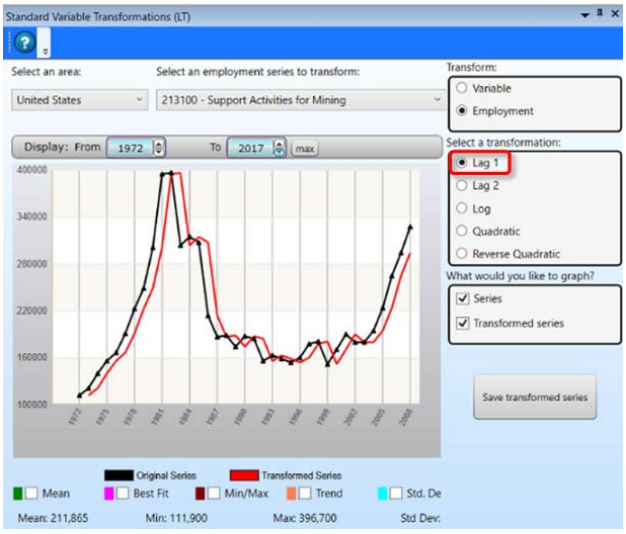


Figure 4: Employment lagging the original series by 1 year

Transformation - **Lag 2**

- Moves the value from a particular year forward two years.

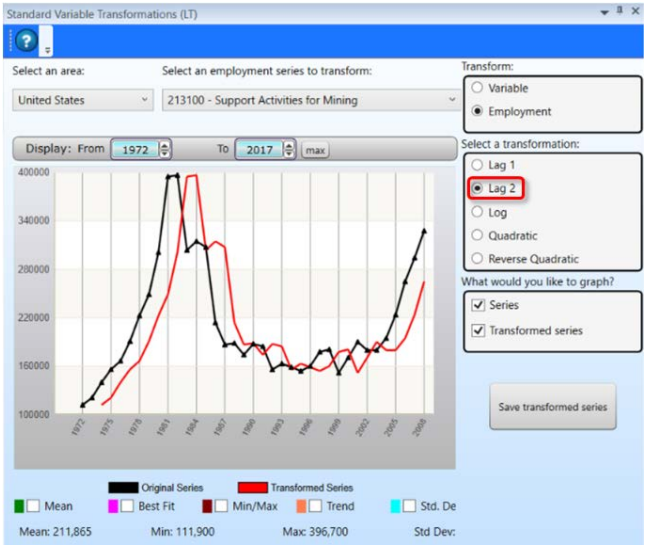


Figure 5: Employment lagging the original series by 2 years

☞A lagged series is shortened by the amount of the lag.

Transformation - **Log**

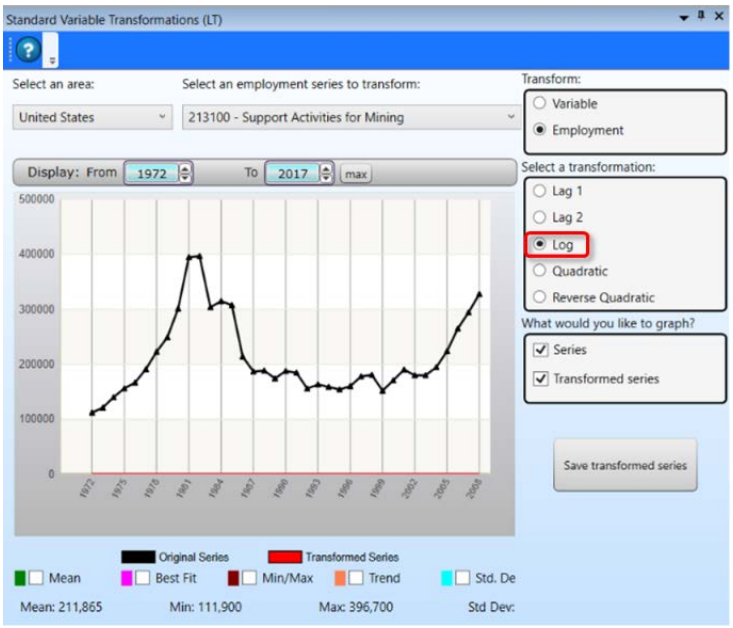


Figure 6: Employment Log transformation

Transformation - **Quadratic**

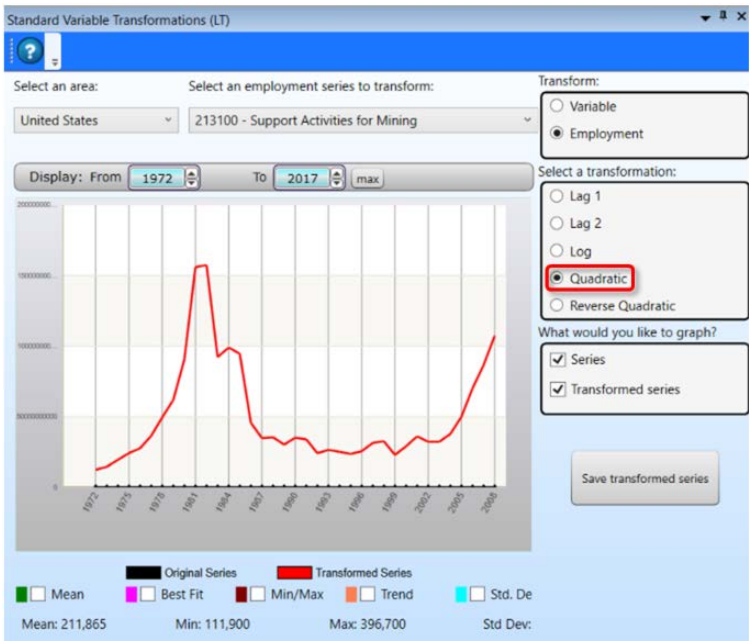


Figure 7: Employment Quadratic transformation

Transformation - **Reverse Quadratic**

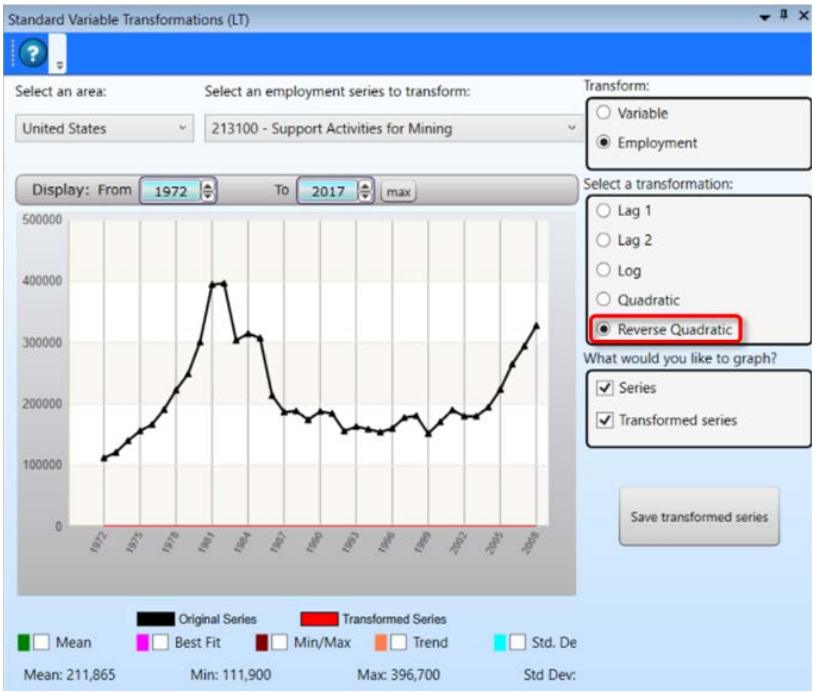


Figure 8: Employment Reverse Quadratic transformation

Save the Transformation Series

1. When you are satisfied with the transformation, click the **Save Transformed Series** button. The **LTIP Message** dialog box will be displayed.
2. Either accept or change the name of the transformed variable.
3. Click **OK** to save the series. Click **Cancel** to discard the transformation.

Related Content

- Variable Directory
- Edit Variables Time Series
- Review Variables

Arithmetic Transformations

Use the **Arithmetic Transformations** module to create new or artificial variables based on other variables or employment data used with OLS projections.

Screen Controls

- **Series 1 Selector** drop-down menu
- **Area 1 Selector** drop-down menu
- **Series 2 Selector** drop-down menu
- **Area 2 Selector** drop-down menu
- **Display** date spinner
    - **Max** button
- **Series 1 Type** control group
    - **Variable** radio button
    - **Employment** radio button
- **Series 2 Type** control group
    - **Variable** radio button
    - **Employment** radio button
- **Arithmetic Process** control group
    - **Addition (+)** radio button
    - **Subtraction (-)** radio button
    - **Multiplication (x)** radio button
    - **Division (/)** radio button
- **What would you like to graph?** control group
    - Line 1 (Black)
        - **Series 1** radio button
        - **Series 2** radio button
        - **Transformed** radio button
    - Line 2 (Blue)
        - **Series 1** radio button
        - **Series 2** radio button
        - **Transformed** radio button
- **Save transformed variable** button
- **Graph Enhancement Controls**

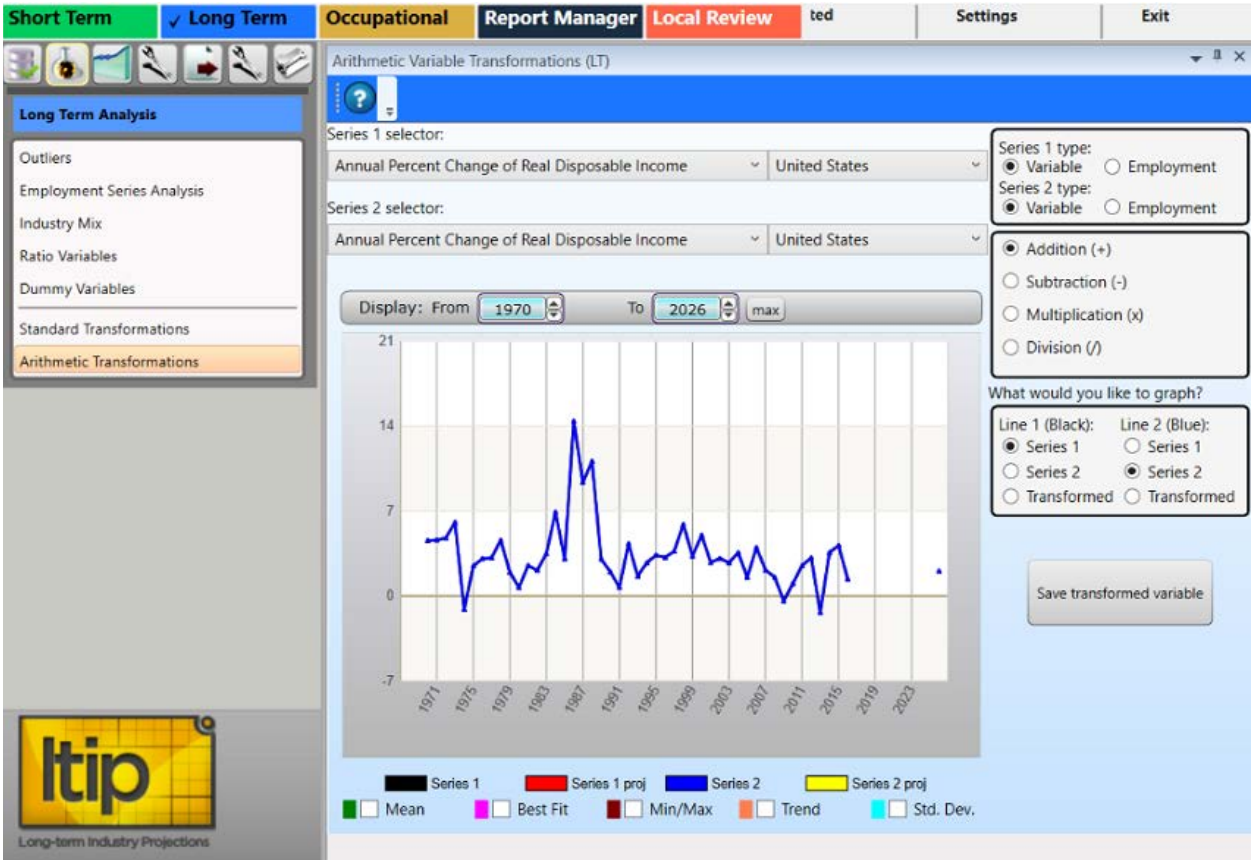


Figure 1: Arithmetic Transformations module

Create Variables

1. Select a **Series 1 type** (Variable or Employment) radio button. The Series 1 selector options change with the Series 1 type selected (see Figure 2).
2. Select an area from the **Area 1 selector** drop-down menu.
3. Select a series from the **Series 1 selector** drop-down menu.
4. Select a **Series 2** radio button. The Series 2 selector options change with the Series 2 type selected (see Figure 2).

Figure 2: Series type selection options

5. Select an area from the **Area 2 Selector** drop-down menu.

6. Select a series from the **Series 2 selector** drop-down menu.

7. Select a time frame using the **Display** date spinner. When **Area** (**1** and **2**), **Series** (**1** and **2**), and the time frame are selected, their data will be displayed in the chart.

- Click the **Max** button to automatically set the longest time frame possible.

8. Use the Graph Enhancement Controls, if desired. These overlaid statistics only apply to the first series (the black line on the graph).

9. Select an option from the **Arithmetic Process** control group. The Arithmetic Process (Addition, Subtraction, etc.) determines the type of calculation used in the transformation.

10. Make radio button selections for **Line 1** and **Line 2** in the **What would you like to graph** control group. These selections assign the **Series** and/or **Transformed Values** to the black and blue chart lines.

Save Transformed Variable

1. Click the **Save transformed variable** button. An LTIP Message dialog box will be displayed.

2. Enter a descriptive name for the transformed variable.

3. Click **OK** to save the transformed variable. Click **Cancel** saving the transformed variable.

Related Content

- Variable Directory
- Edit Variables Time Series
- Review Variables

Long Term Projections Menu Items

Long Term Projections Introduction

The **Long Term Projections** group menu allows the projecting of annual historical employment into the future, for industry and employment statistical reports and for use in Occupational Projections. There are three main projection models in the Projections category. You can use any or all of them, and can run multiple models on an industry and save them.

Figure 1: Long Term Projections group menu

The Long Term Projections group menu contains the following selections:

- Shift Share
- Time Series
- OLS Regression Models
  - Model Definition Tab
  - Projection Results Tab
  - Graphs/Tables Tab
- Batch processing
- Project Multiple Regions
  - Industry View Tab
  - Area View Tab
- Summary
- Delete Area Projections
- Delete Model
- Step Ahead

Related Content

- Create a Long Term Industry Projection

Shift Share

Use the **Shift Share** module to compare different shift-share models to project specific industries and areas. Shift Share models differ in that they do not take a historical series into account. Shift Share uses one or two single points on one or more related industries series to generate a projection.

Shift share models depend on other time series being present besides the one being projected. These include the state Total All Industries series, the national industry series, and the national Total All Industry series. If any points needed for a formula are missing, the system displays an error message, the projected value displays as N/A, and the graph displays only the historical series without a projection.

Screen Controls

- **Select an industry** drop-down menu
- **Select an area** drop-down menu
- **Select a shift-share model** drop-down menu
    - Constant Share
        - **Reference area** control group
            - **U.S.** radio button
            - **State** radio button
            - **Share** field
            - **Reset ratio** button
    - Constant Share of Aggregate Industry Employment
        - Aggregation level control group
            - **Total** radio button
            - **Sector** radio button
            - **3-Digit** radio button
    - Employment-to-Population Ratio
    - Constant Location Quotient
    - Implicit Shift-share
        - **Reference area** control group
            - **U.S.** radio button
            - **State** radio button
    - Modified Implicit Shift-share
        - **Enter/change projected industry ratio** button
    - Classical Shift-share
    - Constant Regional Rate
- **Display** date spinner
    - **Max** button
- **Save projection** button
- **Show saved projections** button

- **Show U.S. unemployment rate** button

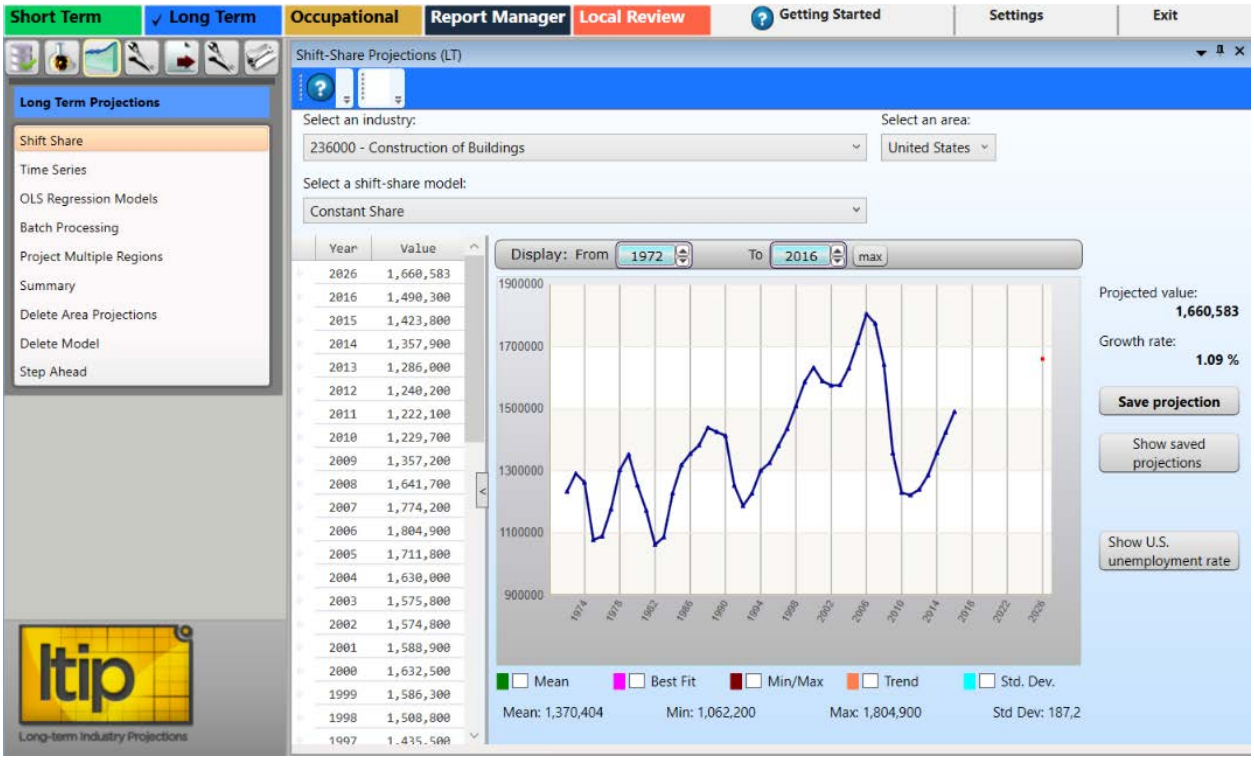


Figure 1: Shift Share module

Use Shift-share Models

1. **Select an Area** from the drop-down menu.
2. **Select an industry**.
3. **Select a shift-share model** from the drop-down menu. Options are:

- Constant Share
- Constant Share of Aggregate Industry Employment

  If you select **Constant Share of Aggregate Industry Employment**, you can select an **Aggregation level** radio button. The selectable options are:

  - Total
  - Sector
  - 3-Digit

  This model depends on there being a time series and projected value for an aggregate level to which the projected industry belongs. If the aggregate level series or projection does not exist, the projection cannot be calculated.

  - Employment-to-Population Ratio. The area selected must have a population variable defined.

- Implicit Shift-share
- Modified Implicit Shift-share. Selecting Modified Implicit Shift-Share enables the **Enter/change projected industry** ratio button.
- Classical Shift-share. If you select **Classical Shift-share**, the **Shift-Share Projections** dialog box displays. Enter the **Projected industry share** as a number between 0 and 1, then click **OK**. The **Projected ind. ratio** entered displays to the right of the graph. Click **Enter/change projected industry ratio** to edit the value.
- Constant Regional Rate

☞If you select a sub-state area, the shift-share model options change. The **Constant Share** and **Modified Implicit Shift-share** models include a **Reference area**. Options are U.S. and State. If you choose State, you must have a statewide projected value for the industry in the employment table or the model will not run.

4. Select a time frame using the **Display** date spinner. By selecting an industry, area, shift-share model, and time frame, data is displayed in the chart. Note that the projected value changes when the date spinners are manipulated.

- Click the **Max** button to automatically set the longest time frame possible.

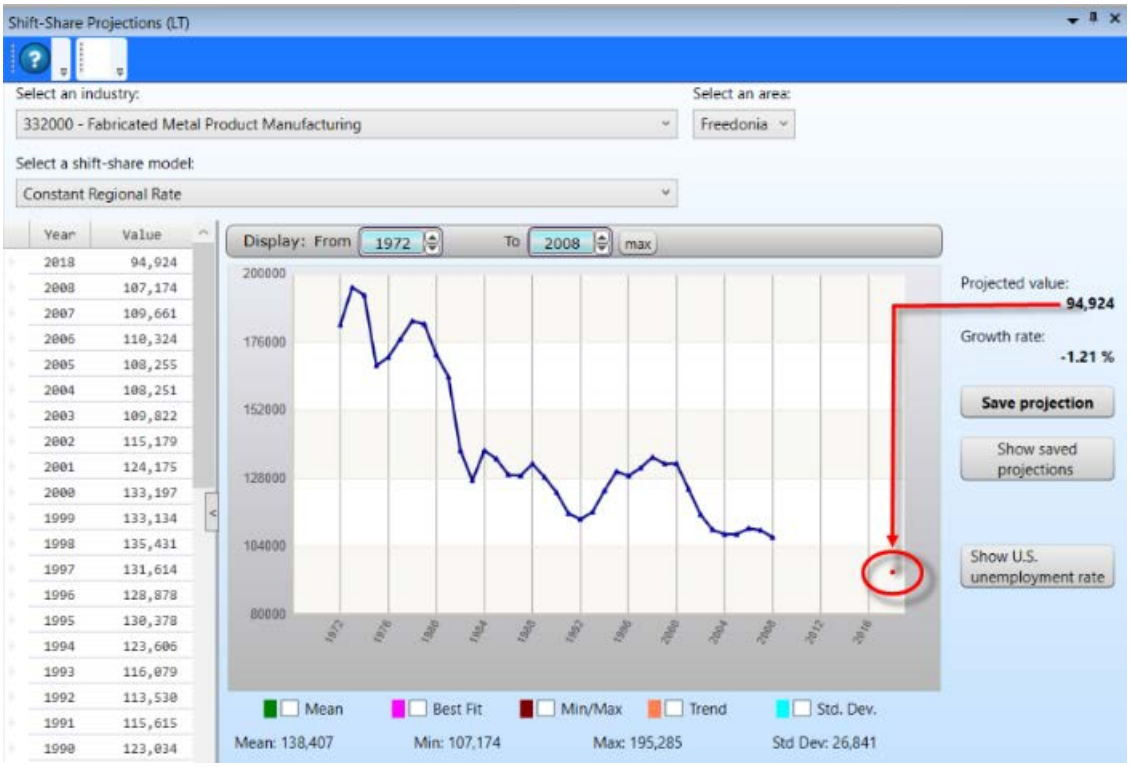


Figure 2: Data charted for the selected variables

The table and graph display the historical series along with the projected value. The projected point is shown on the graph in red (highlighted in Figure 2). The Projected value and Growth rate display to the right of the graph.

5. Use the Graph Enhancement Controls, if desired.

Display the Unemployment Rate

To display the **U.S. Unemployment Rate**, click the **Show U.S. Unemployment Rate** button. This value is distributed with the Projections Suite software. On the U.S. Unemployment Rate window, you can view data for a specific time frame by manipulating the **Display** date spinner. The **Max** button sets the longest time frame possible.

Save Projection

To save projected data, click the **Save projection** button.

Show Saved Projections

To display saved projections, click the **Show Saved Projections** button. The saved projections will display in a separate window.

Time Series

Use the **Time Series** module to set up projections for specific industries and areas. Time Series projections do not use any explanatory variables, nor any input other than the historical series. The historical series must be complete. If there are missing data points, you cannot calculate the projection.

Screen Controls

- **Select an industry** drop-down menu
- **Select an area** drop-down menu
- **Select a time series model** drop-down menu
- **Display** date spinner
    - **Max** button
- **Save projection** button
- **Show saved projections** button
- **Graph Enhancement** controls

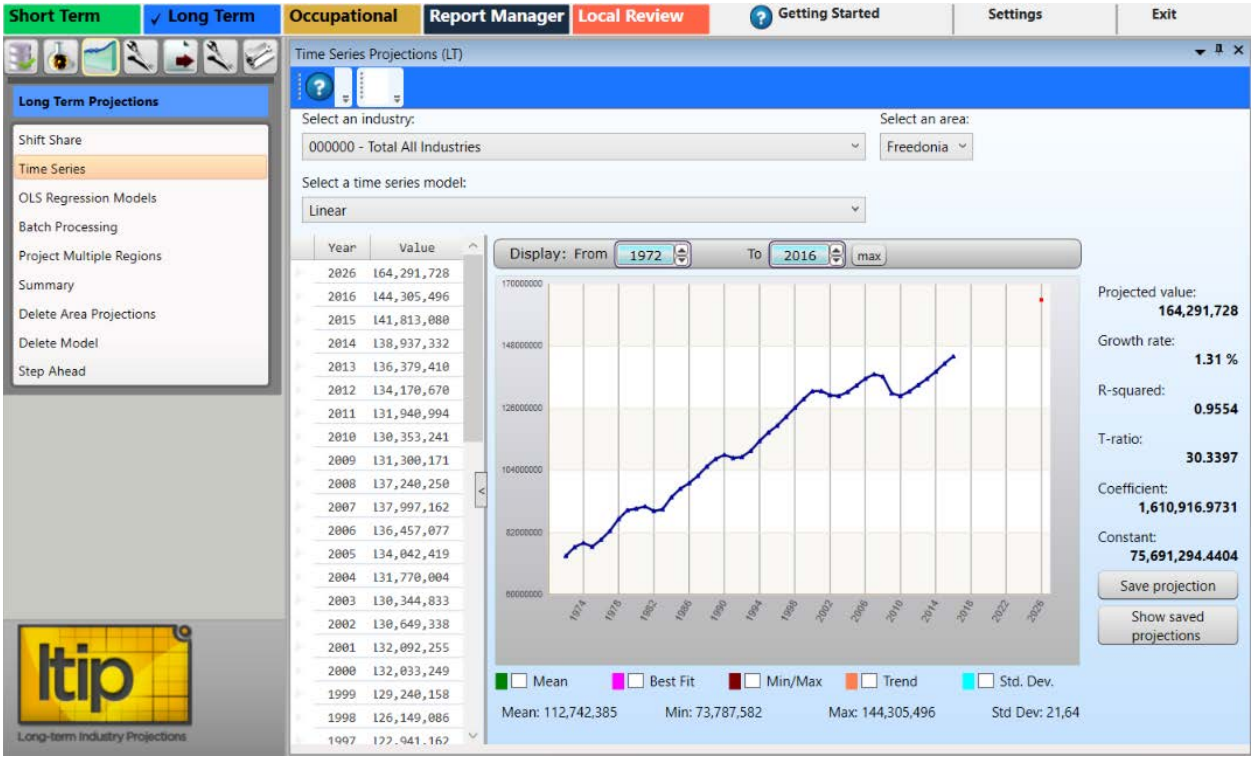


Figure 1: Time Series module

Display Time Series Models for Specific Industries and Areas

1. **Select an Area** from the drop-down menu.

2. **Select an Industry**.
3. **Select a Time Series Model**. The options are:

- Linear
- Logarithmic - calculates a regression equation based on the log of year rather than the year itself.
- Exponential (Semi-log) - the inverse of the logarithmic model. It is based on exponentiation of the year, or conversely, the logarithm of the employment value.
- Polynomial - attempts to fit a quadratic regression line to the historical series. The equation has two terms: a squared term and a linear term. Because of this, there are two Coefficients and two T-ratios in the explanatory statistics.

☞The Best Fit and Trend check boxes in the Graph Enhancement Controls calculate lines based on the Linear and Polynomial models. If you choose the Linear model then click Best Fit, the statistical line should line up with your projection. The same is true of the Polynomial model and the Trend Line.

4. Manipulate the Display date spinners to set the time frame. The associated data will be displayed in the chart. The Projected value, Growth rate, R-squared, T-ratio, Coefficient, and Constant statistics display to the right of the graph. If any data points are missing, the values to the right of the graph display as N/A and the graph displays only the historical series without a projection.

- Click the **Max** button to display the longest time frame possible.

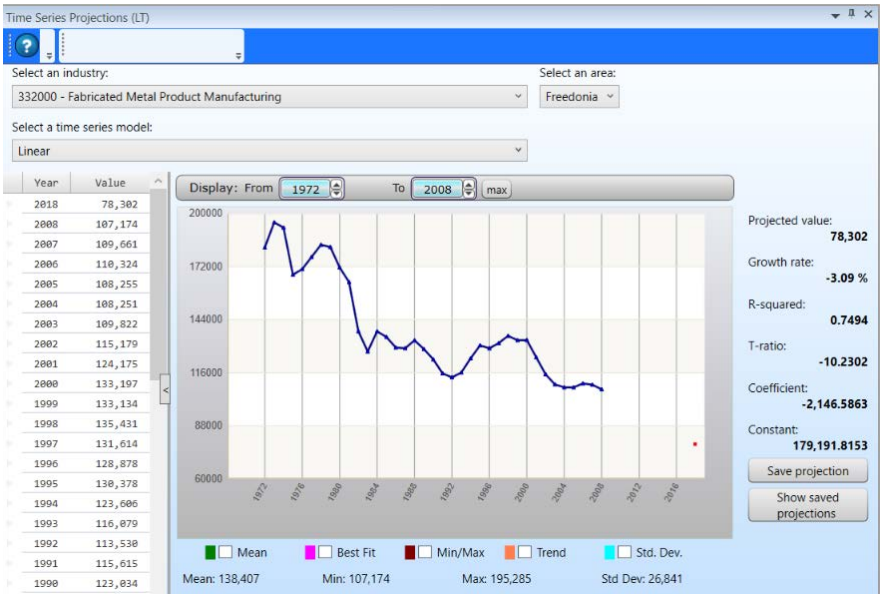


Figure 2: Charted data for the selected variables

Chart Enhancements

In addition to the charted data, Graph Enhancements Controls can be overlaid on the chart. To display an enhancement, select its associated check box.

Save Projections

To save projected data, click the **Save Projection** button. The projected values are stored in the database along with the explanatory statistics. You can save as many projections for the same industry as you like.

Show Saved Projections

To display the saved projections, click the **Show Saved Projections** button. The saved projections will be displayed in their own window:

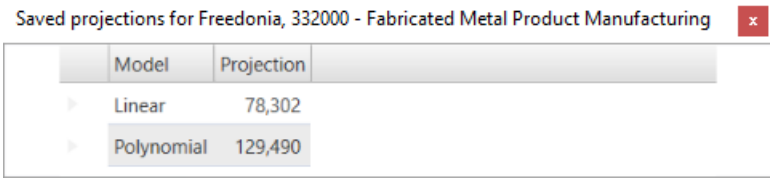


Figure 3: Saved projections

OLS Regression Models

Use the **Ordinary Least Squares (OLS) Regression Models** module to set up options for projecting different scenarios for specific industries, areas, and time frames. The result of the calculation is a regression equation that is used to project a value for the dependent variable, the industry historical series.

Screen Controls

- **First year** and **Last year** spinners
- **Select an industry** drop-down menu
- **Select an area** drop-down menu
- **Model selection** tab
  - **Export** model radio button
    - **Export** check boxes
  - **Local** model radio button
    - **Local** check boxes
  - **User-defined** model radio button
- **Model definition** tab
- **Projection results** tab
- **Graphics/Tables** tab
- **Use dummy variable** spinner
- **Correction for serial correlation** check box
- **# of Theil-U forecast years** input field
- **Save Comments** button

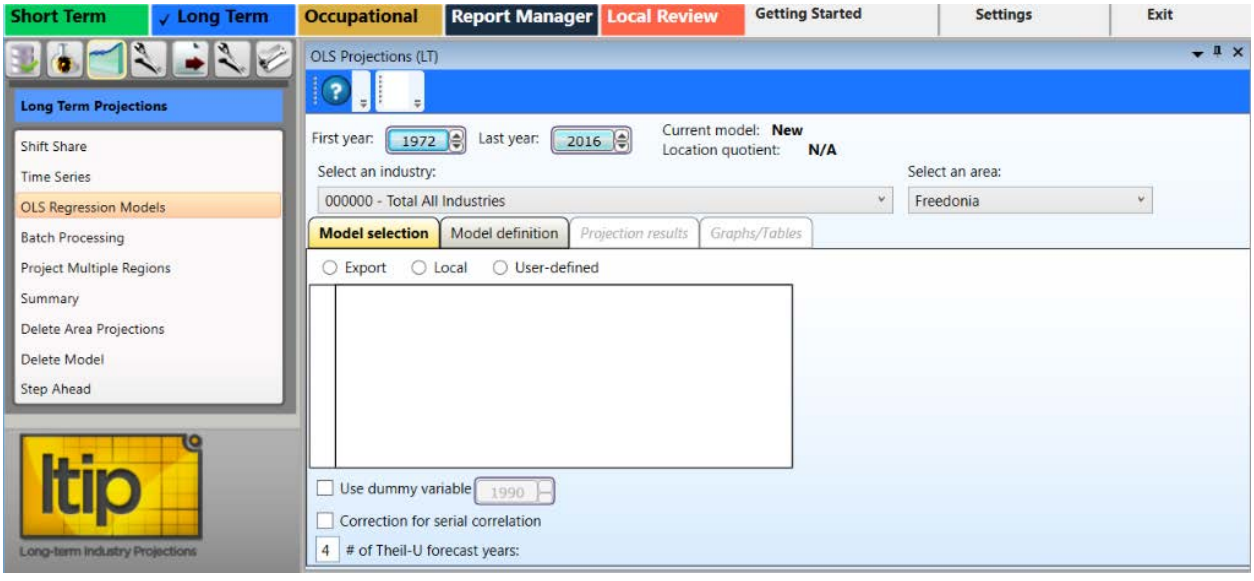


Figure 1: OLS Regression Models module

Set Up Options for Projections

1. Select the **First year** and **Last year** for your time frame, using the date spinners.
2. **Select an Industry** from the drop-down menu.
3. **Select an Area**.

☞The Model selection, Model definition, Projection results, and Graphs/Tables tabs represent different stages of the model definition and projection process. The Projection results and Graphs/Tables tabs are inactive until you select or define a valid model.

4. On the **Model selection** tab, select the model type:

- Export
- Local
- User-defined - models defined by selecting an Export or Local model and adding variables or other model options on the **Model definition** tab.

☞You can select any of the ten predefined OLS models in the system or any user-defined models that have been saved previously.

- Select a model by checking the listed boxes. When you select a model, the model definition and any saved comments display, the model is listed in the current model field, and the Projections results and Graphs/Tables tabs become active. You can enter new comments about the model you are using, then click **Save comments**.

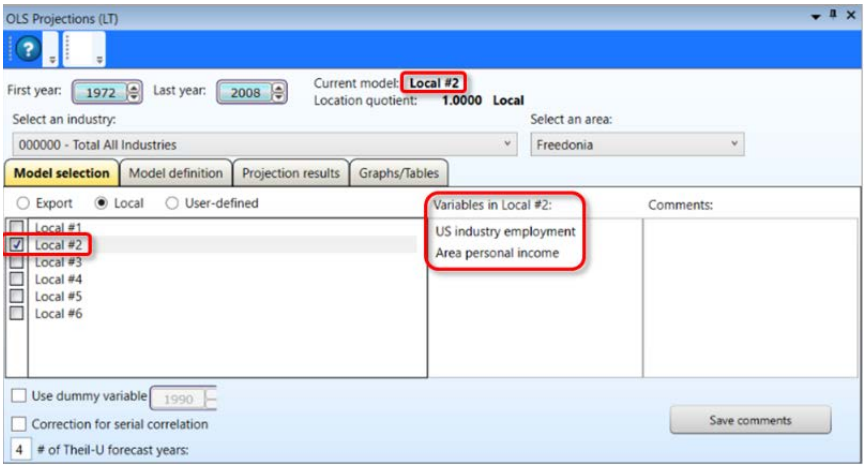


Figure 2: After the Local #2 option is checked, variables used in that selection are displayed

- Optionally, select **Use dummy variable** and select the **year** (a runtime option only).
- Select **Correction for serial correlation** for the model to correct for a serial correlation, if applicable.
- Optionally, enter a number for the **# of Theil-U forecast years**. The Theil-U forecast years default is 4.

5. Click the **Model Definition** tab or go directly to Projection results (if the tab is enabled).

Related Content

- Model Definition Tab
- Projection Results Tab
- Graphs/Tables Tab
- Delete Model
- Dummy Variables

Model Definition Tab

The Model Definition tab allows modifications to existing OLS models, or the definition of a model from scratch. When you select a model on the **Model selection** tab, the values display on the **Model definition** tab. You can add options to the model or click **Clear model settings** to clear the current selections.

Screen Controls

- **Independent Variables** check boxes
- **Other Model Options** check boxes
- **Runtime Options** control group
- **Use an employment series as a variable** button
- **Save settings as user-defined model** button
- **Clear model settings** button

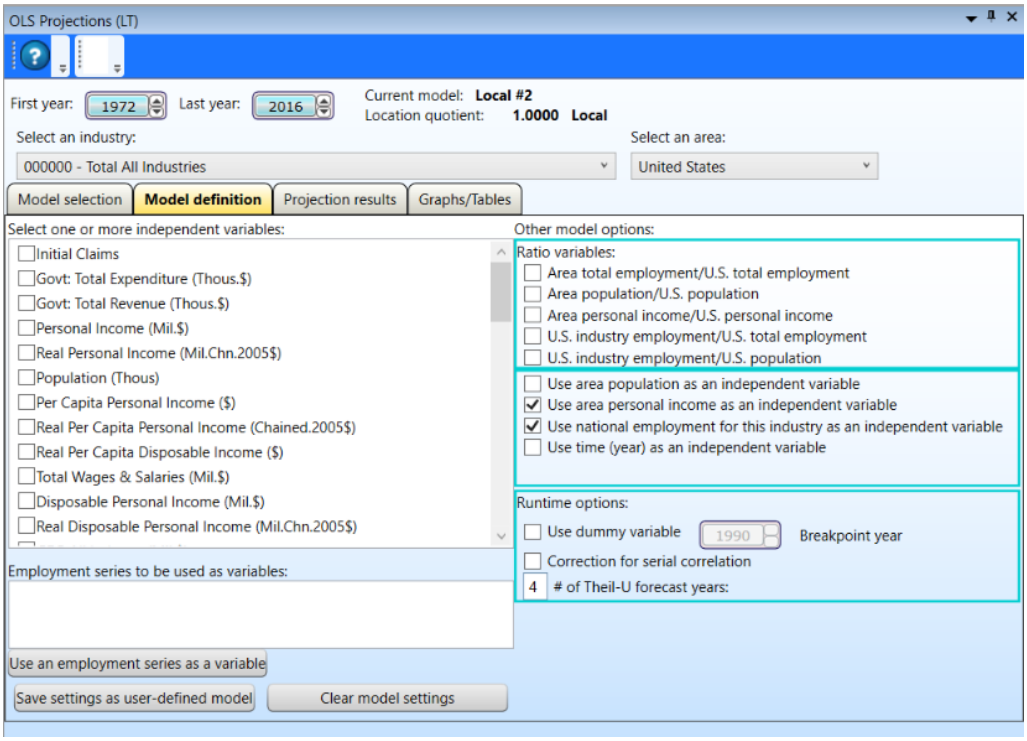


Figure 1: OLS Regression Models module, Model definition tab

Create or Customize a Model

1. **Select one or more independent variables**.
2. Select **Other model options** such as:
   - Ratio variables

- Runtime options

☞The **Use dummy variable** option is not stored as part of the model definition but is an optional parameter at the time of the projection calculation.

3. Click the **Use an employment series as a variable** button. A series of OLS Projections dialogs will display.

    1. Select the **Area** and click **OK**.

    2. Select an **Industry** and click **OK**. The employment series displays in the **Employment series to be used as variables** table. To remove the employment series, right click the industry in the box and select **Remove**.

    3. Repeat these steps to add additional industries. Selected industries are listed in the **Employment series to be used as variables** table. Right click the variable and select **Remove** to remove it.

4. Click the **Save settings as user-defined model** button. You will be prompted to enter a model name.

5. Enter a **Model name** and click **OK**. The model is now available for use on the **Model selection** tab, by selecting the **User-defined** radio button.

To start over with different variables, click **Clear model settings** to clear the selected options.

Related Content

- Projection Results Tab
- Graphs/Tables Tab
- OLS Regression Models
- Dummy Variables

Projection Results Tab

The **Projection results tab** displays the results of the OLS Regression Model, with the selected options.

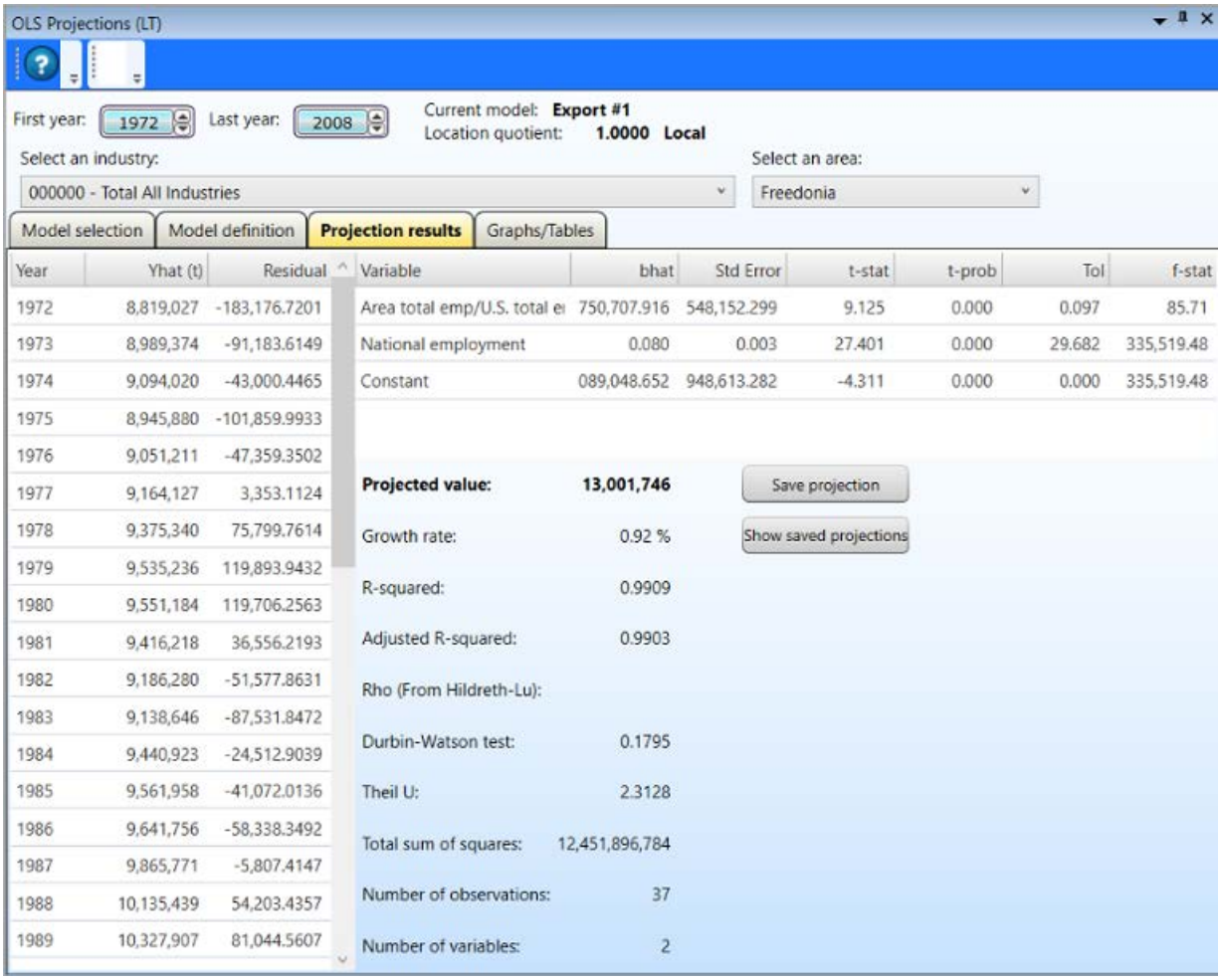


Figure 1: Projection Results tab

The **Projected value** is in bold text. Beneath it are explanatory statistics:

- Compound annual Growth rate
- R-squared
- Adjusted R-squared
- Rho value that is computed using the Hildreth-Lu algorithm if you selected Correction for serial correlation as part of the model definition
- Durbin-Watson test
- Theil- U
- Total sum of squares
- Number of Observations and Variables in the OLS regression matrix

Above these statistics is a table displaying statistics related to the variables making up the model. There is one row for each variable, plus a row for the regression equation's constant term. The statistics in the table are:

- b-hat or beta value, which is the coefficient of the variable in the equation
- Std Error (standard error)
- t-stat<istic>
- t-prob<ability>
- Tol<erance>
- f-stat<istic>

On the left side of the screen, the table displays a row for each year in the historical series. The total number of rows should match the observation count. The Yhat (t), the value of the historical series predicted by the model, and the Residual (the difference between the Yhat and the actual value of the historical series for the year) are displayed.

You can **Select an industry** to project a value for another industry.

Click **Save projection** to save the model you want to keep. The projected value is saved in the database along with all of the associated statistics as well as the beta and y-hat tables. You can save as many model results for the same industry as you want.

Click **Show saved projections** to view a pop up with currently saved projections.

Related Content

- OLS Regression Models
- Model Definition Tab
- Graphs/Tables Tab

Graphs/Tables Tab

The **Graphs/Tables tab** displays the results of the OLS Regression Model. You can see a graph of the historical series and all of the variables that make up the model.

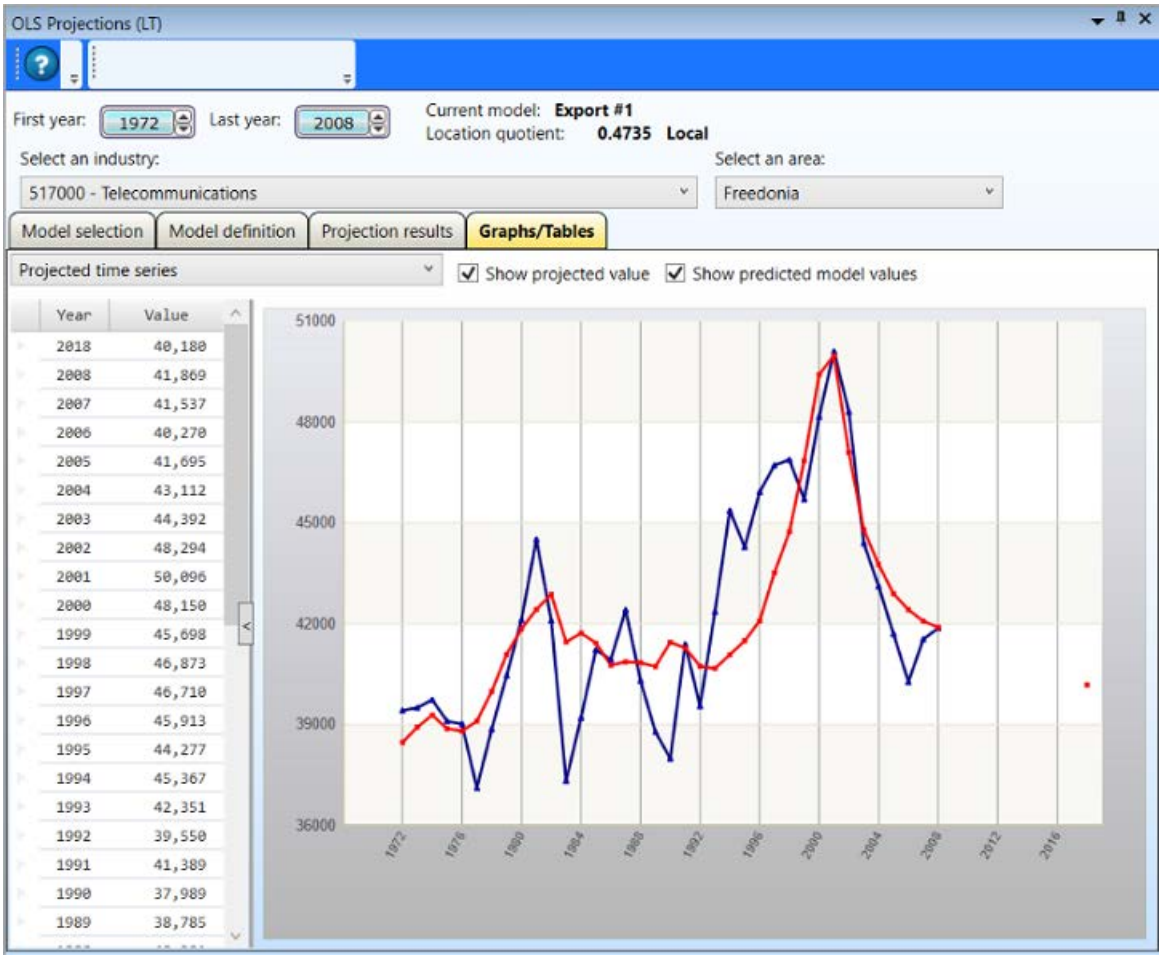


Figure 1: Graphs/Tables tab

Adjust Data View

1. Select a **First year** or **Last year**.
2. **Select an industry** to view the selected model's data for that industry.
3. **Select an area** to view the selected model's data for the industry in different areas.
4. Select an option from the drop down menu:

- Projected time series
- U.S. industry emp/U.S. population

- Area personal income
- Residuals

5. Optionally:

- Click **Show projected value**.
- Click **Show predicted model values** - only available if Projected time series is selected from the drop down menu.

Related Content

- OLS Regression Models
- Model Definition Tab
- Projection Results Tab

Batch Processing

Use the **Batch Processing** module to process multiple industries at the same industry level using one or more existing models. Options are available to customize the settings used when batch processing multiple industries.

Screen Controls

- **User settings** tab
  - **Select an Area** drop-down menu
  - **Select Industry Level** drop-down menu
  - **Correction for serial correlation** check box
  - **Reference area** radio buttons
    - **National** radio button
    - **State** radio button
  - **# Theil U forecast years** spinner
  - **Add dummy variable** check box
    - **Breakpoint year for dummy variable** spinner
  - **Run Projections** button
  - **Save Projections** button
- **Projection Results** tab
- **OLS Details** tab
- **Error Report** tab
- **Use as first year for shift-share/time series** check box and spinner
- Model tabs
  - **Shift Share** tab
  - **Time Series** tab
  - **OLS Regression** tab

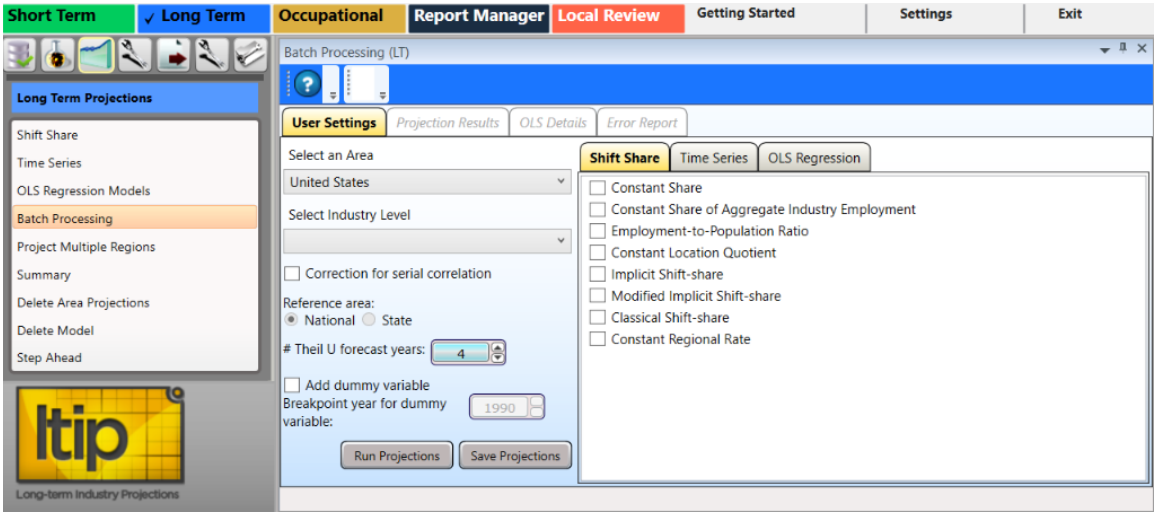


Figure 1: Batch Processing module

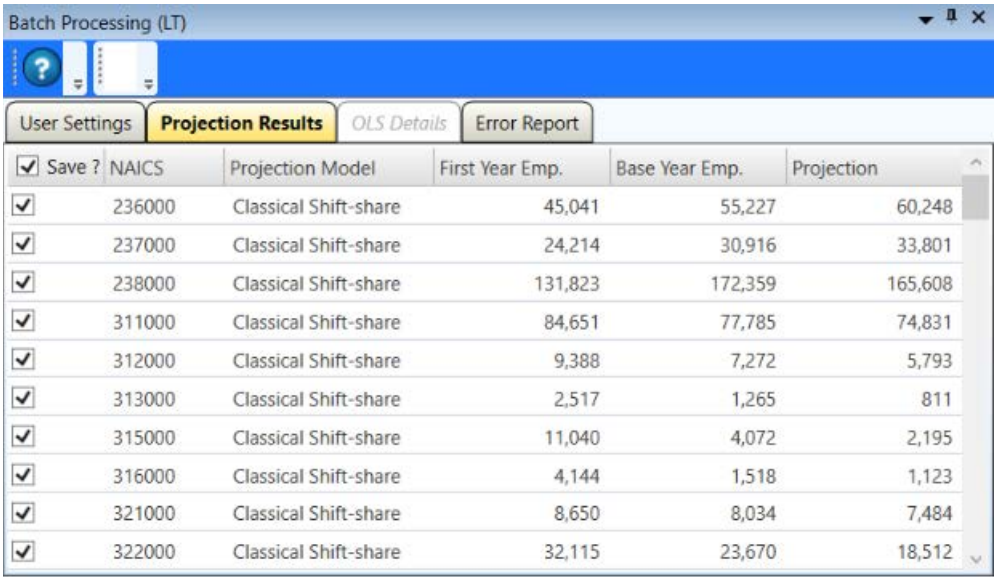
Batch Processing Multiple Industries

1. **Select an Area** from the drop-down menu.
2. **Select an Industry Level** from the drop-down menu.
3. Optionally, select any of the following controls:

- Select Correction for serial correlation.
- Select a **Reference area** - this option is only available if you selected a sub-state area.
- Select the # Theil U **forecast years**.
- Select **Add dummy variable**.
    - If using a dummy variable, select the Breakpoint year for dummy variable using the spinner. A breakpoint year is a place in the time series (year) where values change significantly. It is set to 1990 by default, the year of the NAICS code change, but it can be set to any year.

4. Click one or more check boxes in any of the **Shift Share**, **Time Series**, or **OLS Regression** model tabs. The **Run Projections** button becomes available after selecting model options.

5. Click the **Run Projections** button. Projection results based on the selected models will be displayed on the Projection Results tab.



Save ?	NAICS	Projection Model	First Year Emp.	Base Year Emp.	Projection
☑	236000	Classical Shift-share	45,041	55,227	60,248
☑	237000	Classical Shift-share	24,214	30,916	33,801
☑	238000	Classical Shift-share	131,823	172,359	165,608
☑	311000	Classical Shift-share	84,651	77,785	74,831
☑	312000	Classical Shift-share	9,388	7,272	5,793
☑	313000	Classical Shift-share	2,517	1,265	811
☑	315000	Classical Shift-share	11,040	4,072	2,195
☑	316000	Classical Shift-share	4,144	1,518	1,123
☑	321000	Classical Shift-share	8,650	8,034	7,484
☑	322000	Classical Shift-share	32,115	23,670	18,512

Figure 2: Projection results

The **Projection Results** tab displays the NAICS code, the Projection Model used in the calculation, the First Year Employment and Base Year Employment, and the

Projection. In the **Save?** column, deselect the projections you do not want to save. On the **User Settings** tab, click **Save Projections**.

☞By default, all projections are saved when you exit the **Projections Results** tab. You must deselect the projection if you do not want it saved.

6. Click the Save  check box to mark all records to be saved or click the individual record check boxes to select specific records to be saved.

7. Return to the **User Settings** tab and click the **Save Projections** button to save the projected values.

OLS Details Tab

The **OLS Details tab** is similar to the Projection Results tab under the OLS Regression Models module. Reference the Projection Results tab for additional information and definitions relating to the OLS Details tab.

☞To enable the **OLS Details** tab you must select a line with an OLS model on the **Projection Results** tab.

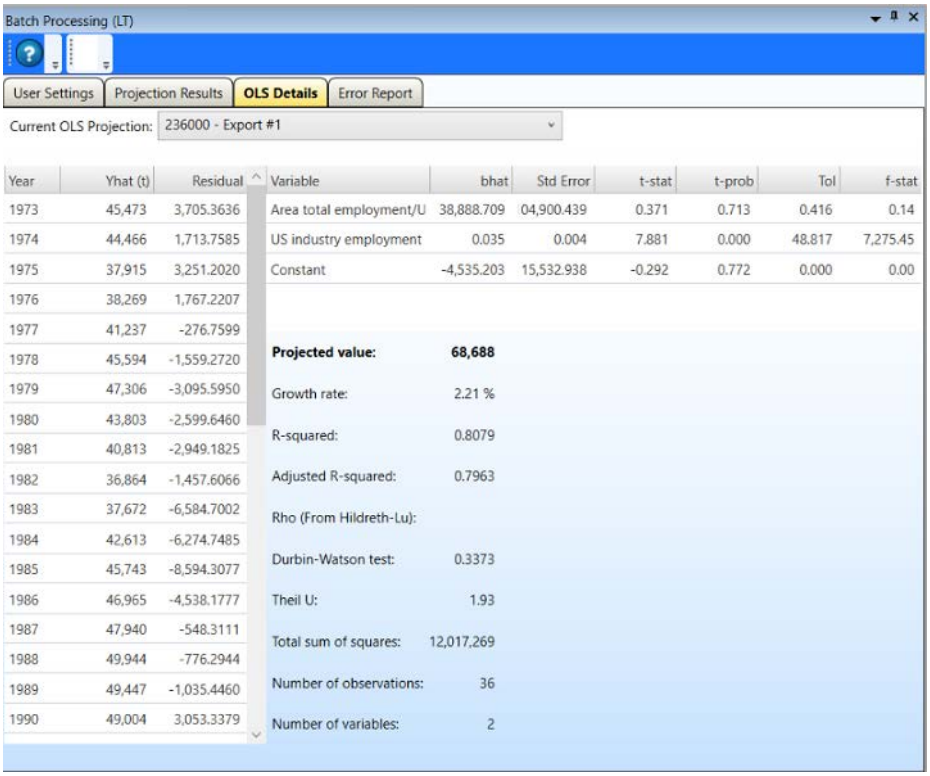


Figure 3: OLS Details tab

Error Report Tab

The **Error Report** tab displays any errors in the projections caused by any of the selected options. The NAICS code, Projection Model, and error message describe any issues.

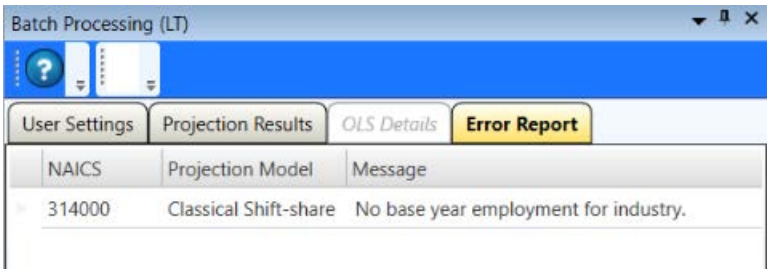


Figure 4: Data errors

Use the **User Settings** tab to make adjustments to the options and models to run other projections. When you click the **Run Projections** button again, before **Save Projections**, an **Unsaved Projections** message will display. Click **Yes** to clear any unsaved projections and rerun the process. Click **No** to exit the process without rerunning the projection.

Related Content

- Project Multiple Regions (LT)

Project Multiple Regions

Use the **Project Multiple Regions** module to create projections across multiple industries for all members of an Area Group. The projections generated for an industry in sub-state areas add up to the state projection.

Screen Controls

- **Select an Area Group** drop-down menu
- **Initial Processing** tab
- **Industry View** tab
- **Area View** tab
- **Analyze** button
- **Calculate** button
- **Load** button
- **Load from summary** button

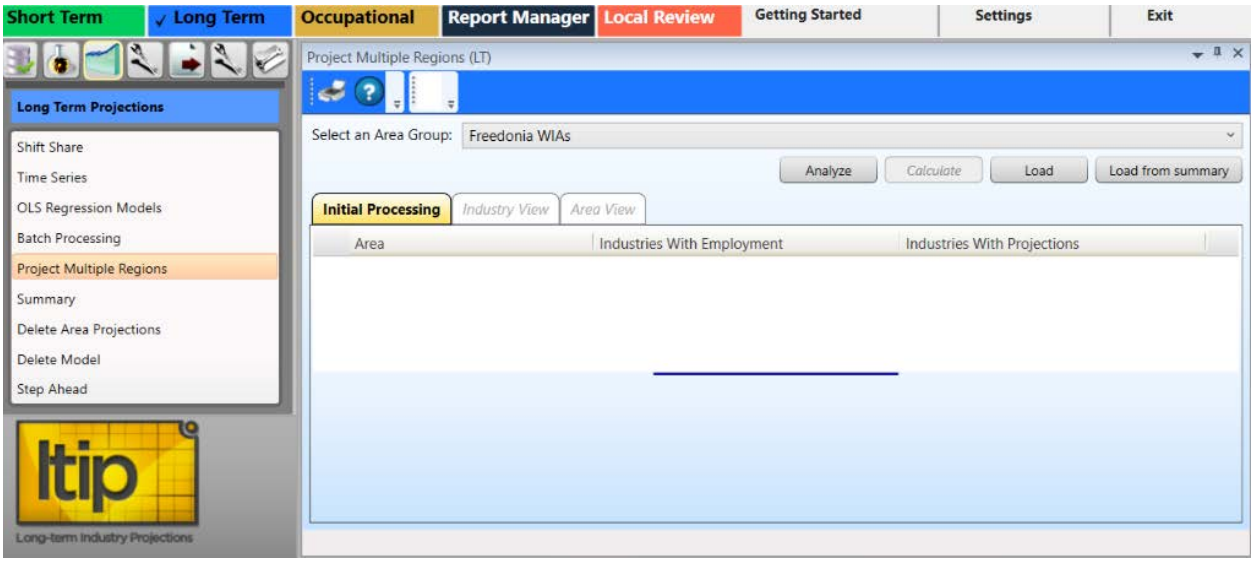


Figure 1: Project Multiple Regions module

Begin Initial Processing

1. **Select an Area Group** from the drop-down menu.

2. Click the **Analyze** button. When the data is calculated, the results will be displayed. You must have a statewide projection for an industry to project that industry at the sub-state level. The **Industries with Projections** are the industries available for sub-state processing.

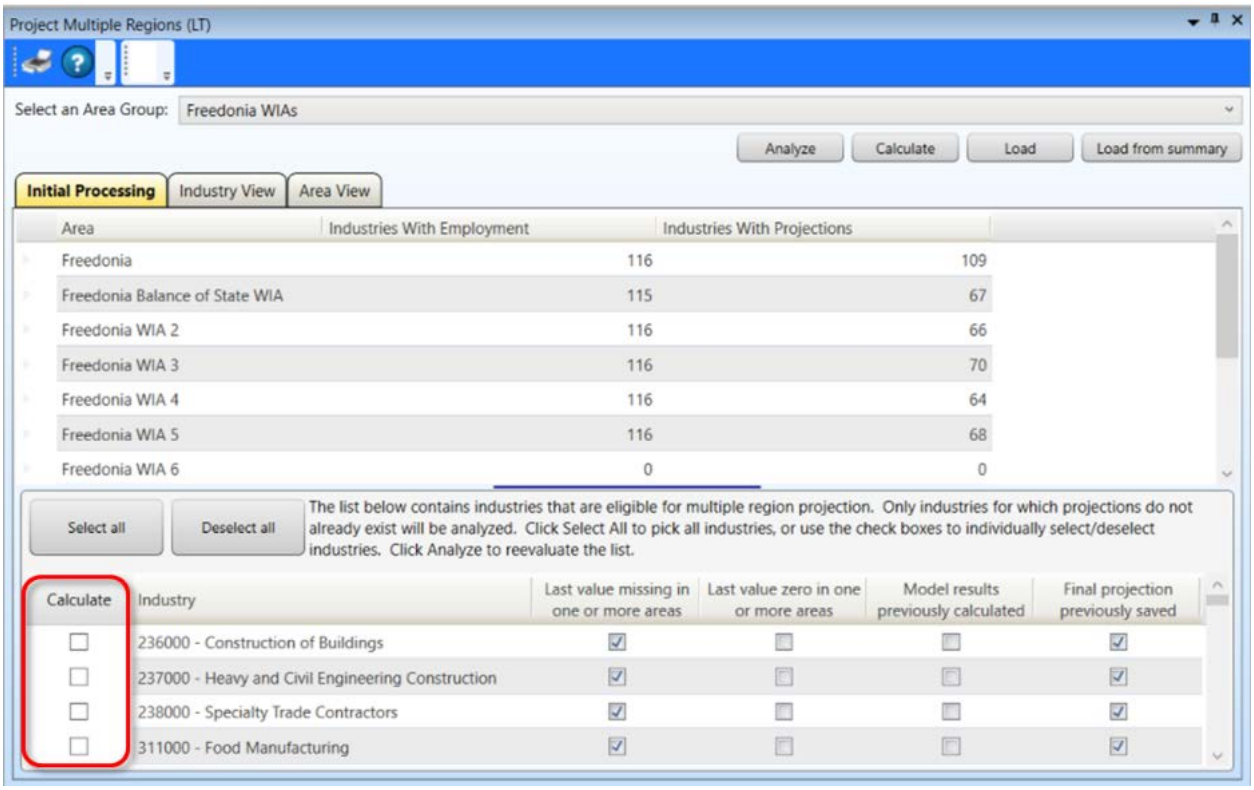


Figure 2: Results of analyzing Freedonia WIAs

3. Click the **Calculate** check boxes for the industries to calculate. Click the **Select all** button to select all industries. Click the **Deselect all** button to deselect all industries.

Industries are automatically selected for calculation unless one of four conditions exists:

- The first condition, **Last value missing in one or more areas**, is a serious problem in Long Term Industry Projections and usually means there is an issue with the data. You can check the box to select the industries, but the model results will not be consistent with other industries.
- The second condition, **Last value zero in one or more areas**, often means that employment for the industry has disappeared and there is no reason for the industry to be projected. The industry should be investigated before continuing.
- The third condition, **Model results previously calculated**, means there is no need to recalculate.
- The fourth condition, **Final projection previously save**d, means multiple region result already exists for this industry. Despite the warnings, you can select any flagged industry for multiple region projecting.

4. Click the **Load** button to load any values that were previously calculated in the Project Multiple Regions module.

☞You can close the Project Multiple Regions screen and the Projections Suite then, in the Project Multiple Regions module, click **Load** to reload the data and pick up where you left off.

5. Click the **Load from summary** button to load results calculated and selected in the Summary module, if applicable.

6. Click the **Calculate** button. When the calculations are complete, the module will automatically switch to the Industry View tab.

Related Content

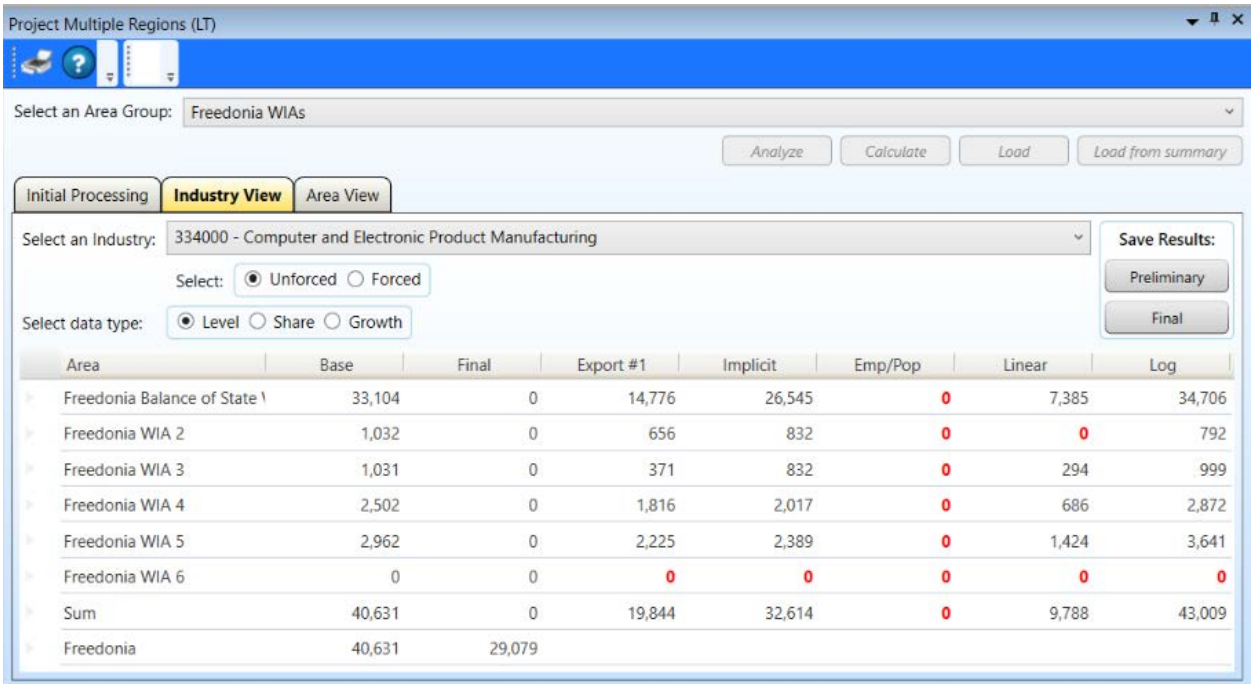
- Industry View Tab (LT)
- Area View Tab (LT)
- Summary

Industry View Tab

On the **Industry View** tab, you can view Information about all calculated industries.

Screen Controls

- **Select an Industry** drop-down menu
- **Select** control group
  - **Unforced** radio button
  - **Forced** radio button
- **Select data type** control group
  - **Level** radio button
  - **Share** radio button
  - **Growth** radio button
- **Save Results** control group
  - **Preliminary** button
  - **Final** button



Area	Base	Final	Export #1	Implicit	Emp/Pop	Linear	Log
Freedonia Balance of State \	33,104	0	14,776	26,545	0	7,385	34,706
Freedonia WIA 2	1,032	0	656	832	0	0	792
Freedonia WIA 3	1,031	0	371	832	0	294	999
Freedonia WIA 4	2,502	0	1,816	2,017	0	686	2,872
Freedonia WIA 5	2,962	0	2,225	2,389	0	1,424	3,641
Freedonia WIA 6	0	0	0	0	0	0	0
Sum	40,631	0	19,844	32,614	0	9,788	43,009
Freedonia	40,631	29,079					

Figure 1: Industry View tab

View and Save Data

1. **Select an Industry** with the drop-down menu.
2. **Select** the **data type** you want to view:

- Employment **Level** (Level is the only option available for moving and editing values).
- Percent **Share** for the area. Share converts each area's portion of the sum to a percentage. The shares for each area will sum to 100%.
- Compound **Growth** rate for the ten-year period.

3. Select **Unforced** or **Forced**.

- **Unforced** is the default. **Forced** forces the Sum to equal the State or Parent total in the Final column. Do not use **Forced** until the initial analysis by Level is complete.

Enter and Save Final Values

The **Final** column contains values selected by moving the level from the other columns and will be the final saved value for the industry.

1. **Right click** in a model's column.
2. Select **Move Cell** or **Move Column**.

- **Move Cell** moves only that models cell value to the **Final** column.
- **Move Column** moves all values in that model to the **Final** column.

3. To edit a value in the **Final** column **double click** the cell, edit the value, and press **Enter**.
4. In the **Save Results** control group, select a button to save results.

- **Preliminary** - save model calculations as preliminary data for review (Click **Load** on the **Initial Processing** tab to load your preliminary data).
- **Final** - saves the data in the Final column as a final projection for the current industry.

  Saving using **Final** only saves the current industry. This creates a record in the projections table for each sub-state area and uses the value in the final column as the projection. The model type is set to Multiple Region and the selected flag is turned on so that the results can go straight to ICT creation. If the **Forced** option is selected, the forced value is used for the projection.

Related Content

- Project Multiple Regions (LT)
- Area View Tab (LT)

Area View Tab

After calculating the industry information on the Initial Processing tab, the Area View tab becomes available. Use the Area View tab to display calculated industry data for the selected area and sector.

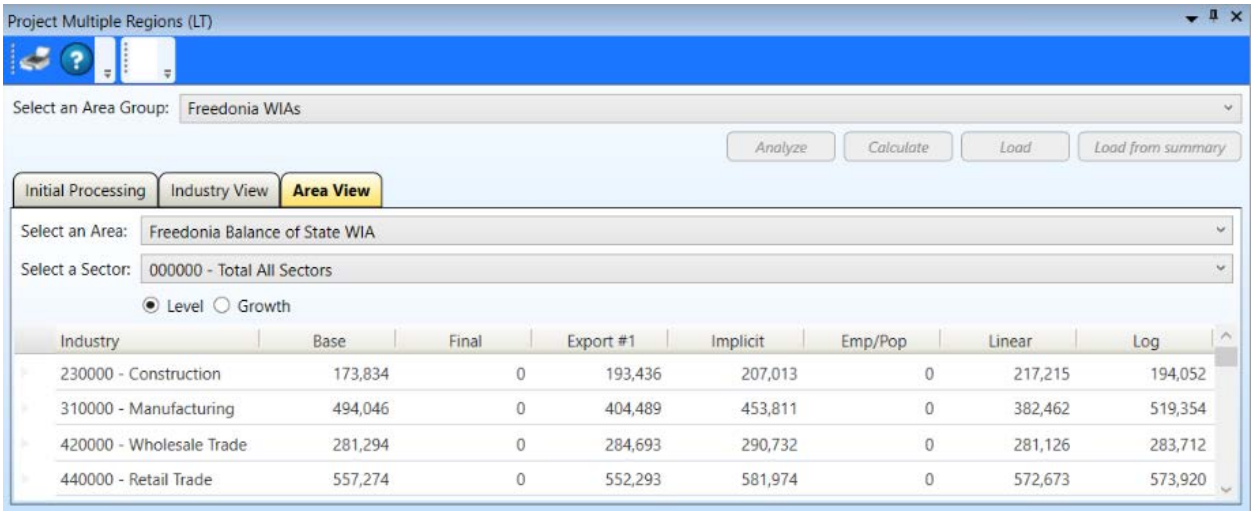


Figure 1: Area View tab

Display Calculated Information

1. **Select an Area** from the drop-down menu.
2. **Select a Sector**. Select Total All Sectors to view all sectors together.
3. Click the **Level** or **Growth** radio button.
   - Level - employment level
   - Growth - compound growth rate for the ten-year period

Related Content

- Project Multiple Regions (LT)
- Industry View Tab (LT)

Summary

Use the **Summary** module to create multiple projections for a single area-industry combination using as many models as you like. You can observe the use of different mathematical procedures, and how including or excluding independent variables will affect the projection. After reviewing the data, select the final projection to copy it to the Industry Control Total file used in Occupational Projections.

Screen Controls

- **Projection Year** drop-down menu
- **Select an area** drop-down menu
- **Select an industry** drop-down menu
- **Auto Industry Select** check box
- **Summary Report Print Options**
- **Print** button
- **To Excel** button

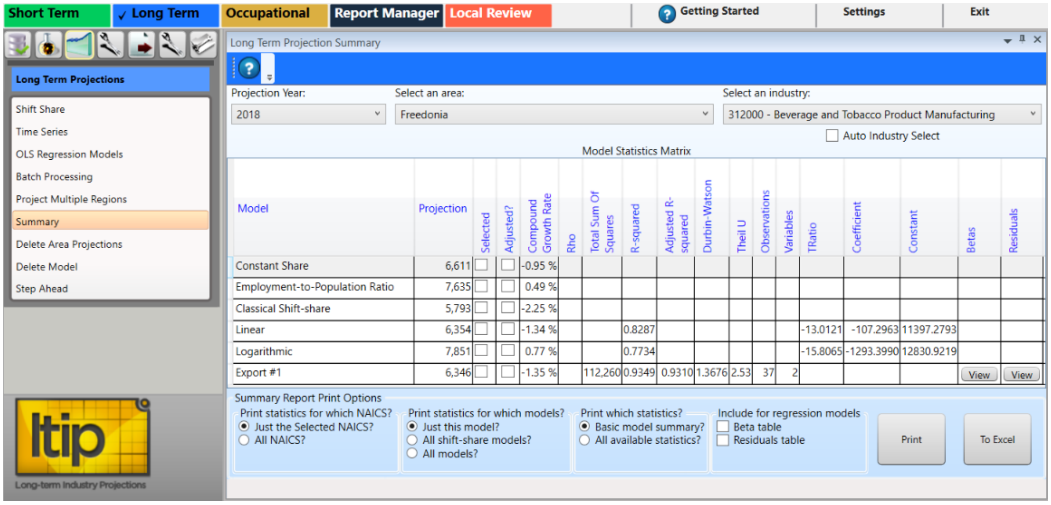


Figure 1: Summary module

The Model Statistics Matrix displays every previously saved projection for the selected parameters. Columns include:

- Model name
- Projection value
- Selected - a check box indicating whether or not the projection is selected for passing onto the ICT file. Selecting a model also makes it available upon clicking the **Load from summary** button in the Project Multiple Regions module.
- Adjusted? - a check box indicating whether or not this projection was saved in the Across Industries or Across Areas Adjustments modules.

The table also includes columns for the Compounded Growth Rate and miscellaneous statistics from various models. The R-squared statistic applies to both OLS and time series models. For OLS models, the columns for Betas and Residuals contain a **View** button. Click **View** to display a table with the associated statistics for the model on that row.

Create a Summary Report

1. Select a **Projection Year** from the drop-down menu.
2. **Select an area**.
3. **Select an Industry** from the drop-down menu.
4. Click the **Selected** check box for the desired model.
5. Click the wanted **Report Print Options**.
6. Select the desired **Regression Models** check box.
7. Click the **Print** button. Selecting Print displays a **Print Preview** pop up. Adjust the view as needed and click the **Print** icon in the Print Preview window (or press **Ctrl+P**).

Export Summary Data

1. Select the **Projection Year**.
2. **Select an area**.
3. **Select an industry**.
4. Select any necessary **Summary Report Print Options**.
5. Click the **To Excel** button. Selecting **To Excel** displays a **Save As** dialog box. Select the location where you want to save the Excel file, enter a **File name**, and click **Save**.

Only one model can be selected for further processing. Click the **Selected** check box next to select the model.

Click the **Auto Industry Select** check box to display the current list of industries for the model you selected for processing.

Related Content

- Project Multiple Regions
- Across Industries
- Across Areas

Delete Area Projections

Use the **Delete Area Projections** module to delete the projections for a specified area and year. This allows you to clear any saved data and start your projections over with fresh data.

Screen Controls

- **Select an Area** drop-down menu
- **Select a Year** drop-down menu
- **Delete Projections** button

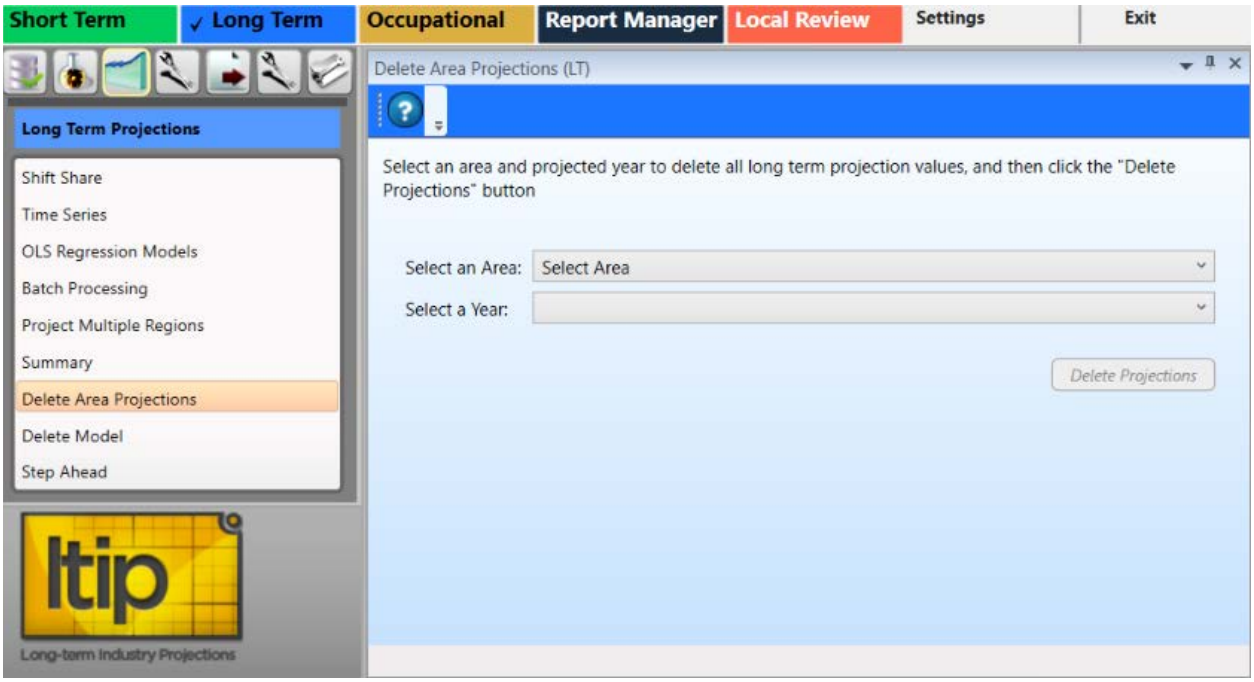


Figure 1: Delete Area Projections module

Delete Area Projections

1. **Select an Area** from the drop-down menu.
2. **Select a Year**.
3. Click the **Delete Projections** button. A **Delete Long Term Projections** dialog box will be displayed.
4. Click **Yes** to delete the data. Click **No** to keep the data.

Delete Model

Use the **Delete Model** module to delete user-defined OLS models. When you delete a model, any projections associated with the model are also deleted. The Delete Model module displays the previously created user-defined models created in the OLS Regression Models module.

Screen Controls

- **Delete Model** button

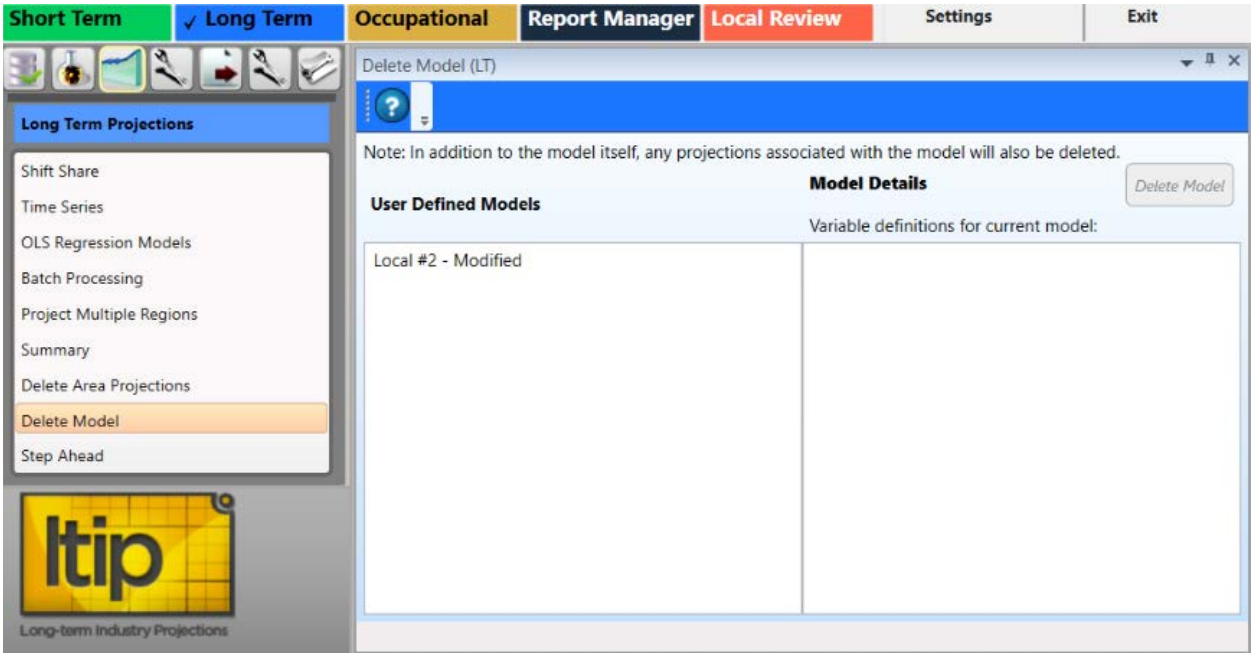


Figure 1: Delete Model module

Delete a Model

1. Select the model to be deleted from the **User Defined Models** table. The **Model Details** will be displayed. Only one model can be selected at a time.
2. Click the **Delete Model** button. The **Are you sure** dialog box will prompt you to confirm deletion of the model.
3. Click **Yes** to delete the model. Click **No** to keep the model.

Related Content

- OLS Regression Models

Step Ahead

One of the criticisms of 10 year projections is that by the time the projections are complete, the base year has already been passed by 1-2 years. The **Step Ahead** module enables analysts to create alternative base year values for either the 9 year or 8 year. For example, in completing the 2016-2026 10-year projections, the base is 2016 but are completed in 2018. Therefore when publishing these results, data are already 2 years behind and don't appear to be "current." The new base year that Step Ahead can create is either 2017 or 2018 (a 9- or 8-year value). This module enables the user to create a new base year value using three different methods which are explained below.

Prerequisites for the Step Ahead model include completing the Long and Short Term Industry Projections. The base year for both sets of projections must be the same or data will not be displayed correctly in the tabs. STIP system round selection must be set for the same base year time-frame as the LTIP base year (i.e., annualized ST base covering the same base time period as the LT projections base year). For example, if LT base is 2016, the ST round must be set to the round that covers all of 2016 (ST Base period ending Dec 2016 or Mar 2017, June 2017, etc.).

It is recommended that the industry structure must be the same for STIP and LTIP, but not required. Only industries with data will be processed in the Step Ahead module.

Screen Controls

- **1-Prepare Data** tab
- **2-Compare LT and ST Base Employment** tab
  - **Process Alternative Base Values** button
- **3-Compare LT and ST Projections** tab
- **4-Evaluate Alternative Base Values** tab
- **5-Evaluate Alternative Base Values** tab
- **6-Review/Edit/Save Alternative Base Values** tab
  - **Load Saved Alternative Base Values** button
  - **Save Alternative Base Year Values** button
- **Prepare Data For Review** button

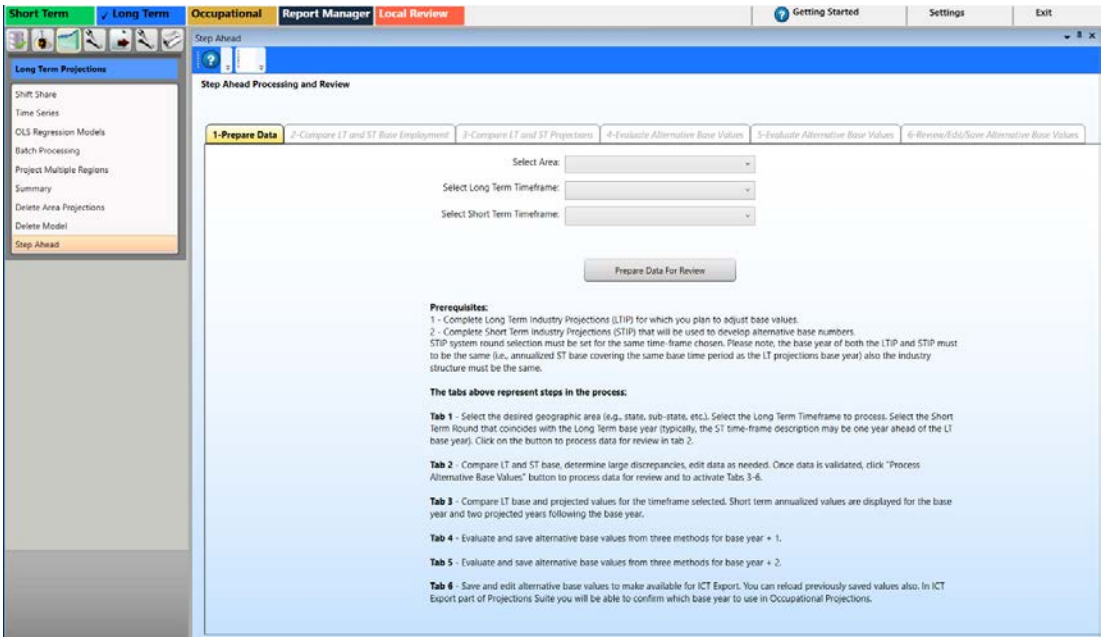


Figure 1: Step Ahead module

1 - Prepare Data Tab

1. Select an area from the **Select Area** drop-down menu.
2. Make a selection from the **Select Long Term Timeframe** drop-down menu.
3. Select a **Short Term Timeframe** from the drop-down menu.
4. Click the **Prepare Data For Review** button. The **2-Compare LT and ST Base Employment** tab will enable and you will automatically be taken to this tab to compare the populated data.

2 - Compare LT and ST Base Employment Tab

1. Click the **Process Alternative Base Values** button. The four additional tabs will be enabled.

3 - Compare LT and ST Projections Tab

This tab displays the data for Long Term and Short Term annualized projection comparison.

4 - Evaluate Alternative Base Values Tab

This tab is used to compare, select, and edit alternative base values to save on the Review/Edit/Save Alternative Base Values tab. To select a value:

1. **Right click** the value and select **Move Cell** from the context menu. The value will be moved to the LT Alternative Base column.

Figure 2: Alternative Base value selected

☞Alternatively, select **Move Column** from the context menu to move the entire column to the LT Alternative Base column.

2. **Double click** in the LT Alternative Base to edit moved values or edit an empty cell. Type the adjusted value and click anywhere else in the table to set the value.

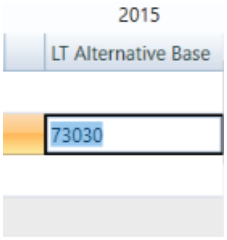


Figure 3: Adjust LT Alternative Base value

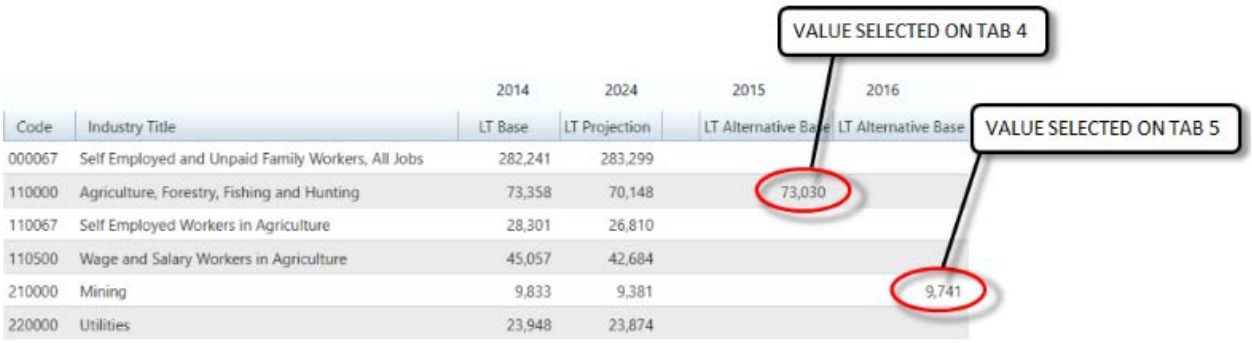
5 - Evaluate Alternative Base Values Tab

Use this tab to evaluate base values for the subsequent year. Use the procedures from the 4 - Evaluate Alternate Base Values tab to move and edit selected values in the LT Alternative Base column.

Figure 4: Alternative Base value selected on the 5 - Evaluate Alternative Values tab

6 - Review/Edit/Save Alternative Base Values

This tab is used to review and save alternative base values from tabs 4 and 5 to fill final Long Term alternative base values.



		2014	2024	2015	2016
Code	Industry Title	LT Base	LT Projection	LT Alternative Base	LT Alternative Base
000067	Self Employed and Unpaid Family Workers, All Jobs	282,241	283,299		
110000	Agriculture, Forestry, Fishing and Hunting	73,358	70,148	73,030	
110067	Self Employed Workers in Agriculture	28,301	26,810		
110500	Wage and Salary Workers in Agriculture	45,057	42,684		
210000	Mining	9,833	9,381		9,741
220000	Utilities	23,948	23,874		

Figure 5: Alternative Base values displayed on the 6 - Review/Edit/Save Alternative Base Values tab

☞Double click the Alternative Base values to edit them in this tab.

1. Click the **Save Alternative Base Year Values** button to save the selected values.

The "saved" alternative base values will be available as an option when exporting the ICT values. You will use the check box on the Long Term ICT Export module to indicate exporting the Step Ahead values and you will choose the 9-year horizon base or the 8-year horizon base as alternative base values.

Step Ahead Calculation

This is the calculation explanation for the 3 methods for tabs 4 and 5:

1 - Header = "LT Compound Annual Growth Method"

LT Compound Annual Growth Method for 1-year Step Ahead = LT Base Value + (LT Base Value * LT Annual Compound Growth Rate)

LT Compound Annual Growth Method for 2-year Step Ahead = 1-year Step Ahead value + (1-year Step Ahead Value * LT Annual Compound Growth Rate)

2 - Header = "ST Quarterly Projected Compound Annual Growth Method"

ST Compound Annual Growth Method for 1-year Step Ahead = LT Base Value + (LT Base Value * ST Quarterly Projected Compound Annual Growth Rate)

ST Compound Annual Growth Method for 2-year Step Ahead = 1-year Step Ahead Value + (1-year Step Ahead Value * ST Quarterly Projected Compound Annual Growth Rate)

3 - Header = "ST Compound Annual Growth Method"

ST Compound Annual Growth Method for 1-year Step Ahead = LT Base Value + (LT Base Value * ST Annualized Compound Growth Rate)

ST Compound Annual Growth Method for 2-year Step Ahead = 1-year Step Ahead Value + (1-year Step Ahead Value * ST Annualized Compound Growth Rate)

Related Content

- ICT Export
- Add Step Ahead Table

Long Term Adjustments Menu Items

Long Term Adjustments Introduction

The **Long Term Adjustments** group menu enables the adjusting of Industry Projections data for regional requirements.

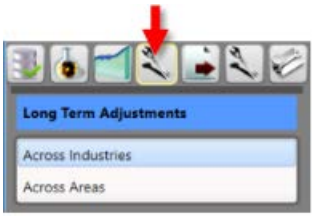


Figure 1: Long Term Adjustments group menu

The Long Term Adjustments group menu contains the following selections:

- Across Industries
- Across Areas

Across Industries

Use the **Across Industries** module to process adjustments over specific industry levels. You can use a variety of techniques to adjust the employment projections when summing to an industry total. Also, you can ensure that sub-sector values sum to the total. You can make final edits to the projected industry values before publication or inclusion in the Industry Control Total (ICT) file.

Screen Controls

- **Select an Area** drop-down menu
- **Select a Year** drop-down menu
- **Adjust** button
- **Reload** button
- **Undo** button
- **Save** button
- **Select Industry Levels** control group
  - **Load** list
  - **Process** list
- **Adjustment Mode** control group
  - **Top-down** radio button
  - **Bottom-up** radio button

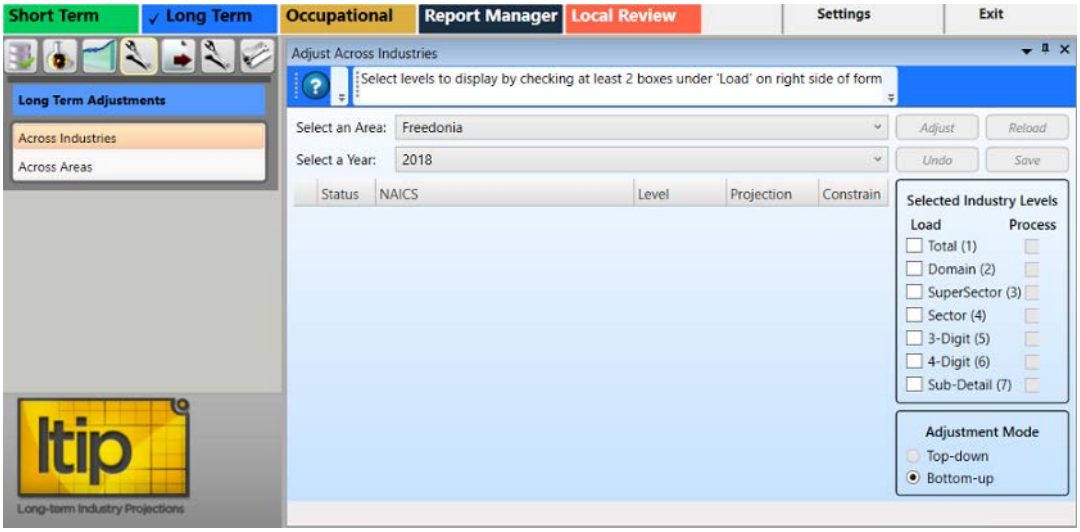


Figure 1: Across Industries module

Adjust Projections Across Industries

1. **Select an Area** from the drop-down menu.
2. **Select a Year**.

3. Select at least two boxes from the **Select Industry Levels** control group, under the **Load** column. The **Adjust** button will activate when two selections from both the **Load** and the **Process** columns within the **Selected Industry Levels** control group are made. A selection in the **Process** column requires the same selection in the **Load** column. Selection of **Load** column choices are not limited by a selection in the **Process** column.

With selections made in the **Selected Industry Levels** control group, NAICS codes and associated projections (or zero-filled holding cells) will populate in the table. After running the adjustment the **Projection** column value will change from its original value.

☞**Bottom-up** will be automatically selected in the **Adjustment Mode** control group because it is the first step. This forces all the industry levels to be additive. The **Top-down** option is not available until you make an edit in the Projection column.

☞To edit the Projection column, **right click** and select **Edit**. A pencil icon will display in the **Status** column of the industry Projection that was edited. The Projection edits roll (from the bottom) up to the parent industry. Editing a value in the Projection column will enable the Top-down adjustment mode.

☞Click the **Constrain** check box to keep the projection value. If you constrain a projection, the additivity of the table may be compromised.

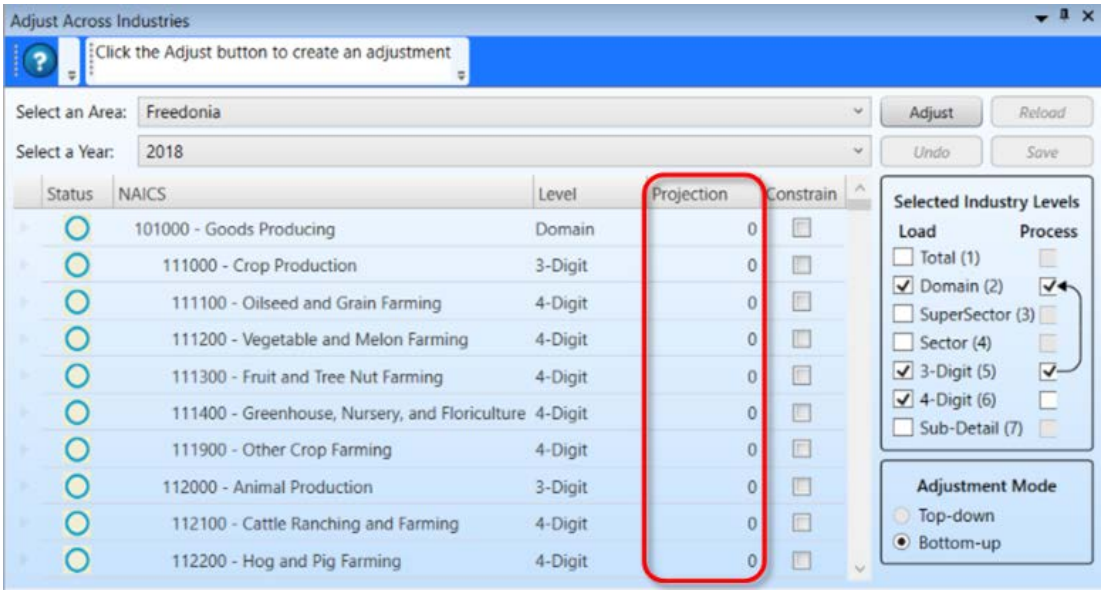


Figure 2: Selected NAICS codes with zero-filled holding cells

4. Click the **Adjust** button. Adjusted projections display in the **Projection** column.

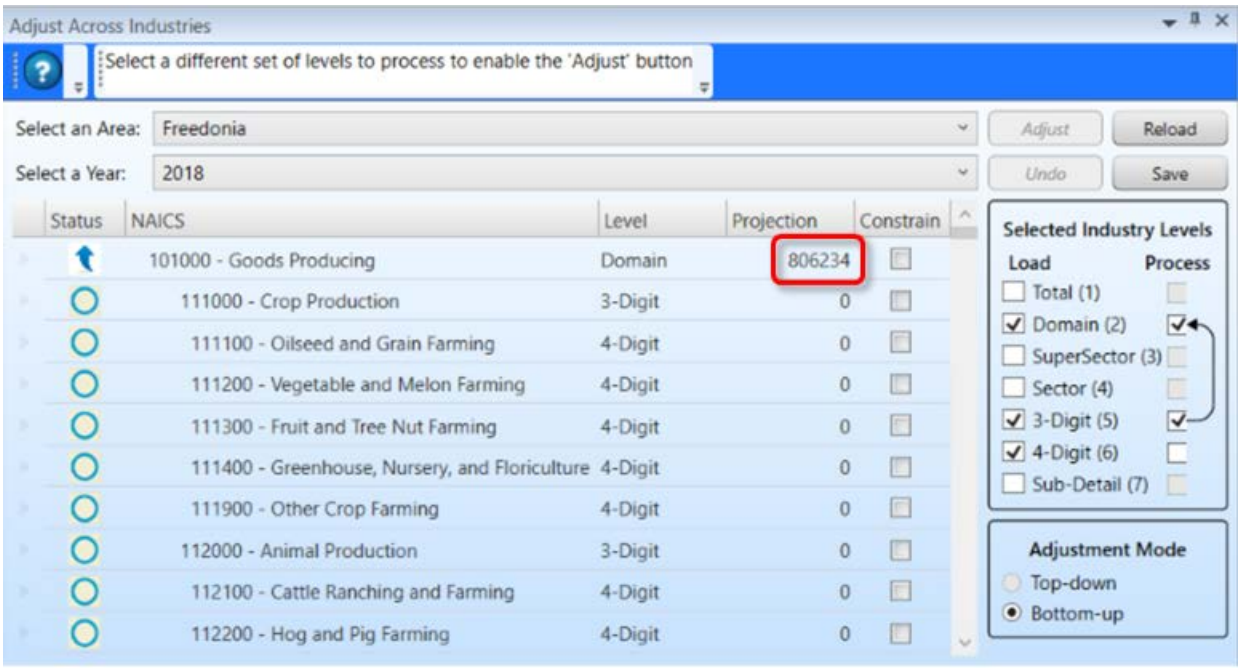


Figure 3: Adjusted Industry Projections display in the Projection column

5. To cancel an adjustment, click **Undo**. To start over, click the **Reload** button. All adjustments are canceled and the projections are restored to the original values in the database.

6. To save the adjusted data, click the **Save** button. A new projections record is created with an adjusted model type and this projection has its selected flag for the area turned off.

Related Content

- Summary

Across Areas

Use the **Across Areas** module to process projection adjustments for specific industries and years, across area groups. This ensures employment projections for individual sub-state areas are consistent, additive, and synchronized with the state totals.

Screen Controls

- **Select an Area** drop-down menu
- **Select an Industry** drop-down menu
- **Select a Year** drop-down menu
- **Adjust** button
- **Reload** button
- **Undo** button
- **Save** button
- **Selected Area Levels** control group
  - **Parent Area** check box
  - **Child Area** check box
- **Adjustment Mode** control group
  - **Top-down** radio button
  - **Bottom-up** radio button
- **Constrain** check boxes

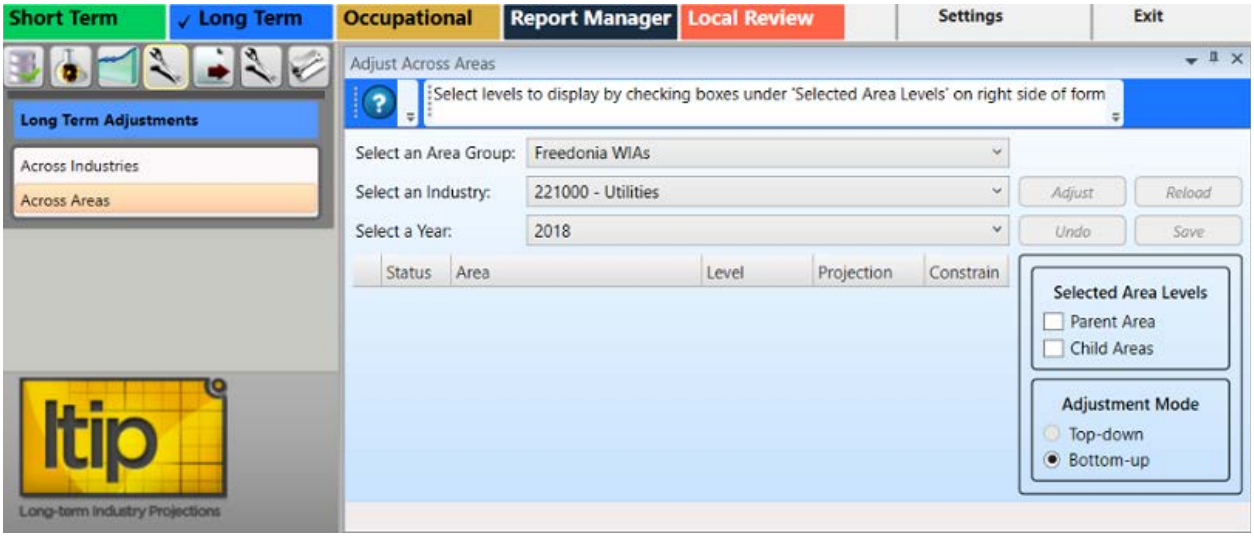


Figure 1: Across Areas module

Adjust Projections Across Areas

1. **Select an Area Group** from the drop-down menu.

2. **Select an Industry**.
3. **Select a Year**.
4. Use the **Selected Area Levels** control group to select the **Parent Area**, **Child Areas**, or both. The **Adjust** button will activate when both the Parent Area and the Child Areas check boxes from the Selected Area Levels control group are selected. As boxes are checked in the Selected Area Levels control group, values for the **Area**, **Level**, and **Projection** will populate in the table.

To perform adjustments on an area group, select both Parent and Child.

Status	Area	Level	Projection	Constrain
	Freedonia (000080)	Parent Area	27563	
	Freedonia Balance of State WIA	Child Area	0	
	Freedonia WIA 2 (800002)	Child Area	553	
	Freedonia WIA 3 (800003)	Child Area	683	
	Freedonia WIA 4 (800004)	Child Area	959	
	Freedonia WIA 5 (800005)	Child Area	155	
	Freedonia WIA 6 (800006)	Child Area	0	

Figure 2: Adjustments across Areas

☞The **Adjustment Mode** control group is set to **Bottom-up** by default. To make a **Top-down** adjustment, you must edit at least one number in the **Projection** column.

☞To edit the Projection column, right click and select **Edit**. A pencil icon will display in the **Status** column of the industry projection that was edited and the Top-down adjustment mode will be enabled.

☞Click the **Constrain** check box to keep the projection value from being adjusted. If you constrain a projection, the additivity of the table may be compromised.

5. Click the **Adjust** button.

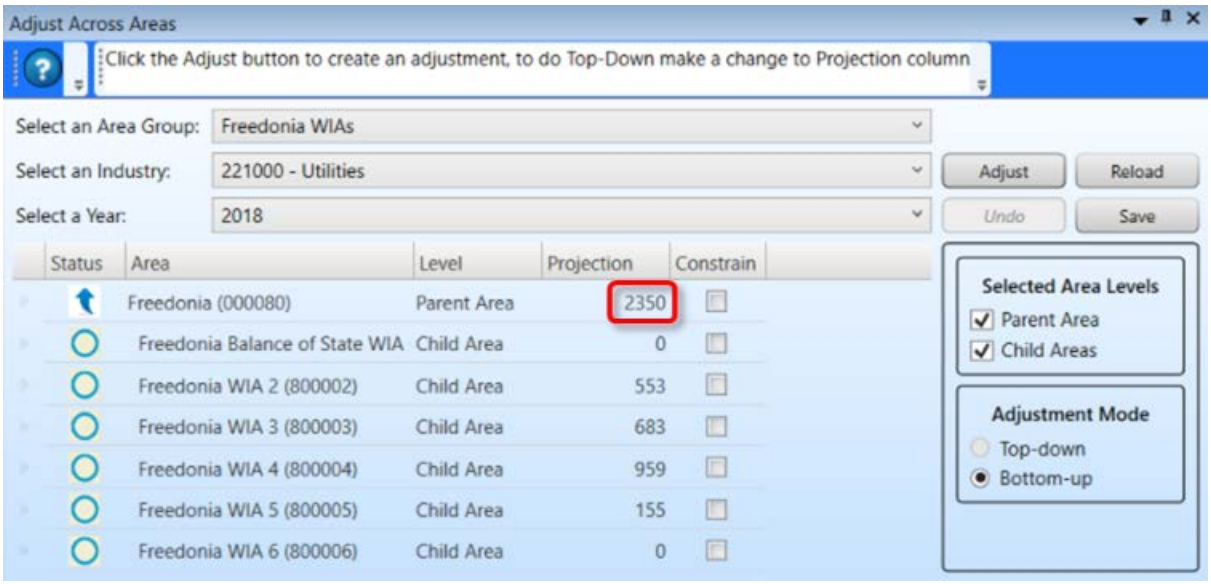


Figure 3: Adjustments have been made

6. Click the **Undo** button to cancel the adjustments to the data. To start over, click **Reload**. All adjustments are canceled and the projections are restored to the original values in the database.

7. Click the **Save** button to save the adjusted data. A new projections record is created with an adjusted model type and this projection has its selected flag set on, with the other selected flag for the area industry turned off.

Related Content

- Summary

Long Term Output Menu Items

Long Term Output Introduction

The **Long Term Output** group menu allows creation of reports or exportation of data from the Long Term Projections application.

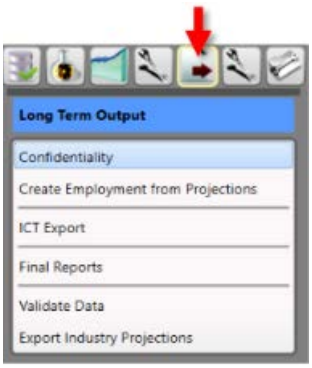


Figure 1: Long Term Output group menu

The Long Term Output group menu contains the following selections:

- Confidentiality
- Create Employment from Projections
- ICT Export
- Final Reports
- Validate Data
- Export Industry Projections

Confidentiality

Use the **Confidentiality** module to flag industries as confidential. This helps prevent releasing industry data to the public where data could potentially identify employers or their information.

The Confidentiality module is available in Short Term and Long Term Projections. Occupational Projections also has a Confidentiality module, but uses different settings. The Notebook is not available in Long Term Confidentiality module.

Screen Controls

- **Select an Area** drop-down menu
- **Confidential** check boxes

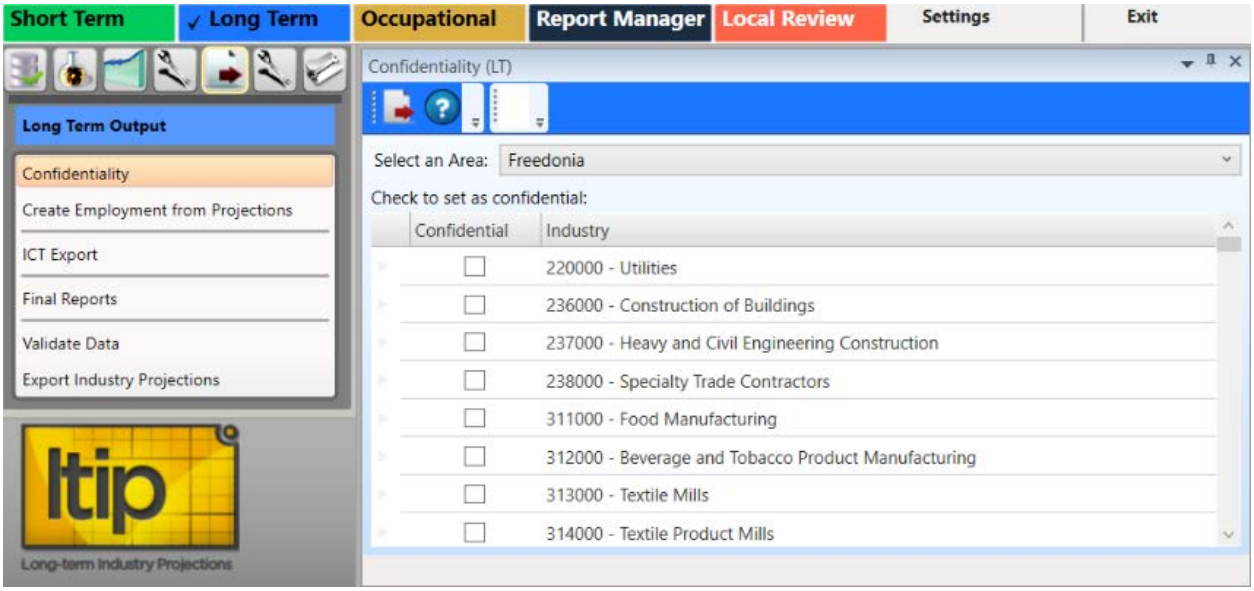


Figure 1: Confidentiality module

Mark an Industry as Confidential

1. **Select an Area** from the drop-down menu. The industries with completed projections within the selected area will display.

2. Check the confidentiality box next to each industry you want to identify as confidential. Or, right click the check box or the industry and select the **Toggle Confidentiality** button. Clicking the Toggle Confidentiality button will change the current setting to the opposite setting.

☞All industries with selected check boxes are treated as confidential. The Industry Projections software does not directly deal with confidentiality, but the checked industry flags carry forward into the ICT records in the Occupational Projections and Report Manager applications.

Create a Report of Confidential Industries

1. Click the **Export** button from the Active Module Toolbar. A **Save As** dialog box will be displayed.
2. Select a save location and type a name for the report.
3. Click **Save**.

The data exports into an Excel spreadsheet. The spreadsheet will contain the list of industries and display whether or not they're confidential.

	A	B
1	confidentiality	industry
2	FALSE	000000 - Total All Industries
3	FALSE	210000 - Mining
4	FALSE	230000 - Construction
5	TRUE	236000 - Construction of Buildings
6	FALSE	237000 - Heavy and Civil Engineering Construction
7	TRUE	238000 - Specialty Trade Contractors

Figure 2: Exported confidentiality report

Alternatively, click the **Print** button in the Active Module Toolbar to print a report of industries and their confidentiality.

Create Employment from Projections

Create Employment from Projections allows the projections for a selected area and year to be included in the employment historical series. Instead of manually adding values to the state historical series one by one, use the Create Employment from Projections module to copy your selected projections into the employment table. One record is created in the employment table for each projection.

Screen Controls

- **Select an Area** drop-down menu
- **Select a Year** drop-down menu
- **Create Employment Records** button

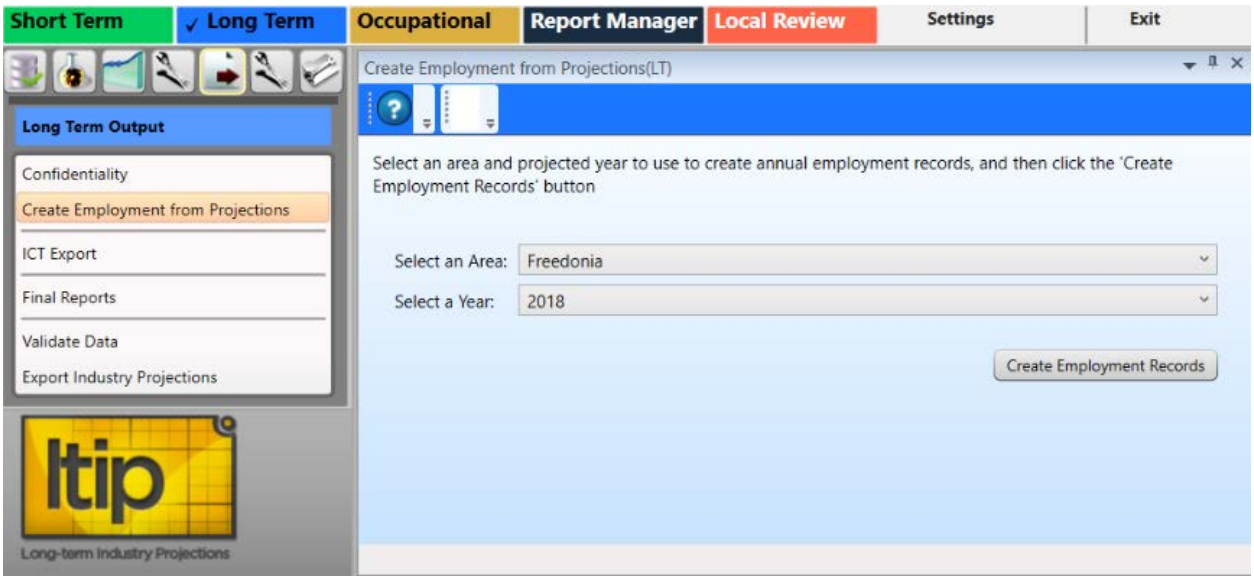


Figure 1: Create Employment from Projections module

Create Employment from Projections

1. **Select an Area** from the drop-down menu.
2. **Select a Year**.
3. Click the **Create Employment Records** button. A dialog will display asking you to confirm updating of annual employment records.
4. Click **Yes** to continue. Click **No** to cancel.

When complete, a message will be displayed in the Active Module Toolbar. The employment table will contain records for the projected year, for each industry with a selected projection.

Figure 2: Annual Employment Records Created

ICT Export

Use the **Industry Control Total (ICT) Export** module to export projected industries to the internal ICT table for use in the Occupational Projections application or to a file for use in other applications or reports. The values exported to the spreadsheet and to the ICT file are the last actual quarterly employment value and the last quarterly projected value for each industry.

A Base Year is determined from the year of the last quarter, and the Projected Year is determined from the year of the last projected quarter. The same base year, or the same projected year value, is the value for all date quarters during the year. The only industries exported to the ICT table or to the spreadsheet file are the industries on the list. If the Selected Industries list needs modification, modify the list and export the industries again. Previously saved ICT projections for the area change to the new listed industries.

Screen Controls

- **Select an Area** drop-down menu
- **Transfer ICT data to Occupational Projections** check box
- **Use Step Ahead** check box
  - **9 Year Horizon Base** radio button
  - **8 Year Horizon Base** radio button
- **Available Industries** table
- **Selected Industries** table
- **Move** buttons

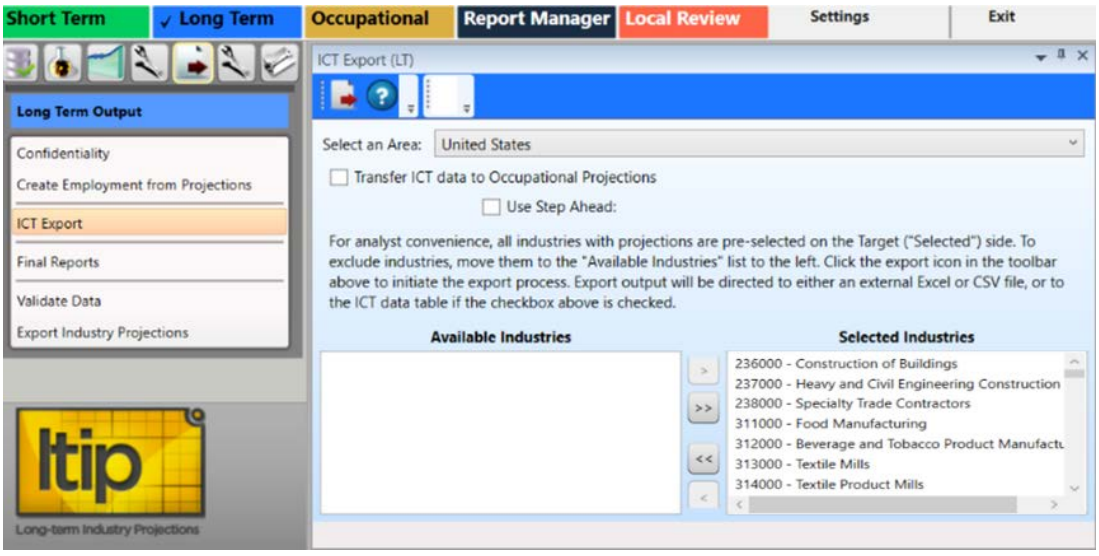


Figure 1: ICT Export module

Utilize ICT Export

1. **Select an Area** and a list of industries with projections will be displayed in the **Selected Industries** table. Industries that *should not* be exported should be moved to the **Available Industries** table. However, exporting all of the industries is usually typical.

2. To move industries into the **Available Industries** table (and exclude them from exportation), select an industry and click the **Move left**  button.

- Manipulate the additional **move** and **move all** buttons to move industries from the Selected Industries table to the Available Industries table, and vice versa.
- **Right-clicking** any industry opens a context menu which allows you to **Remove** or **Add Selected** (depending on which table you've right-clicked into), **Select All**, or **Unselect All** industries.

☞Multiple industries can be moved at a time. For help with selecting multiple industries, click here.

Export Data to Occupational Projections

1. To transfer ICT data to the Occupational Projections application, check the **Transfer ICT data to Occupational Projections** box prior to exporting the data.

2. When the list of selected industries is ready, click the **Export** button on the Active Module Toolbar.

3. A **Finished** message will display, letting you know the ICT data from the Selected Industry table was exported to the ICT table in Occupational Projections. Click **OK**.

Export Data to a Spreadsheet

1. Ensure the **Transfer ICT data to Occupational Projection** box is unchecked.

2. Click the **Export** button. A **Save As** window will display.

2. Select a location and type the name of the file to be exported.

3. Click **Save**.

Use Step Ahead

To use data prepared in the Step Ahead module:

1. Click the **Use Step Ahead** check box. When you click the Use Step Ahead check box it will activate two radio buttons - one for 9 year and one for 8 year. The system forces you to choose one or the other.

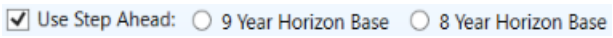


Figure 2: Use Step Ahead check box

2. Select either the **9 Year Horizon Base** radio button or the **8 Year Horizon Base** radio button.
3. Click the **Transfer ICT data to Occupational Projections** check box.
4. Click the **Export** icon on the Active Module Toolbar to export the Step Ahead data to Occupational Projections.

Related Content

- Edit ICT
- Step Ahead

Final Reports

The **Final Reports** module enables temporary adjustment, printing, and exporting of industry data within a selected area and projection year.

Screen Controls

- **Select an area** drop-down menu
- **Select the projection year** drop-down menu
- Missing base year records control group
    - **Print the report with '0' in the base year column for these records** radio button
    - **Remove these records from the report** radio button
- **Preview Report Data** button
- **Hide Preview** button

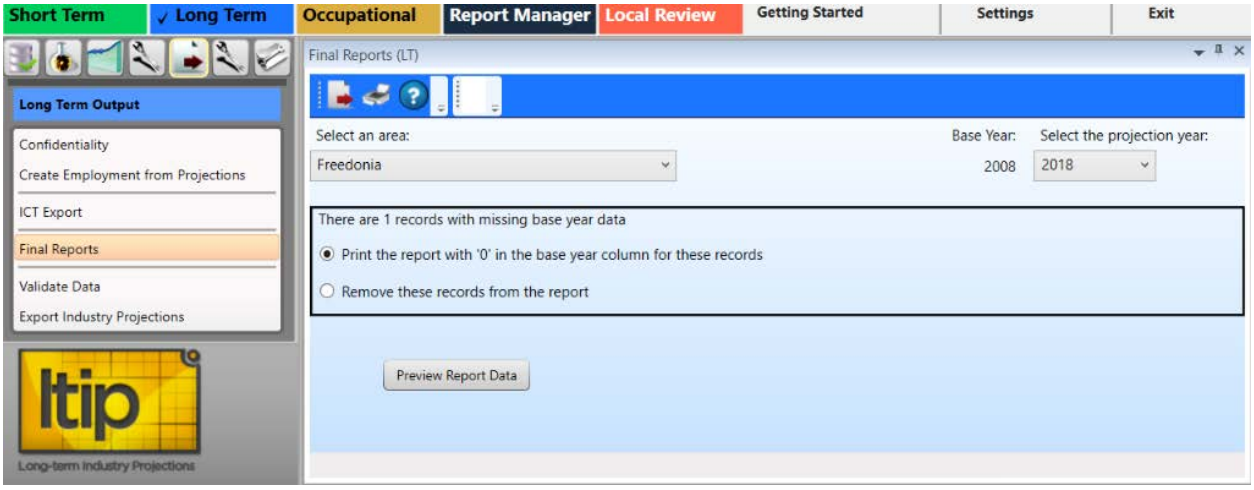


Figure 1: Final Reports module

Create Final Reports

1. **Select an area** from the drop-down menu.

2. **Select the projection year**. Upon selecting an area and projection year, a message will be displayed stating if the selected combination of area and projection year data contains any records missing base year data.

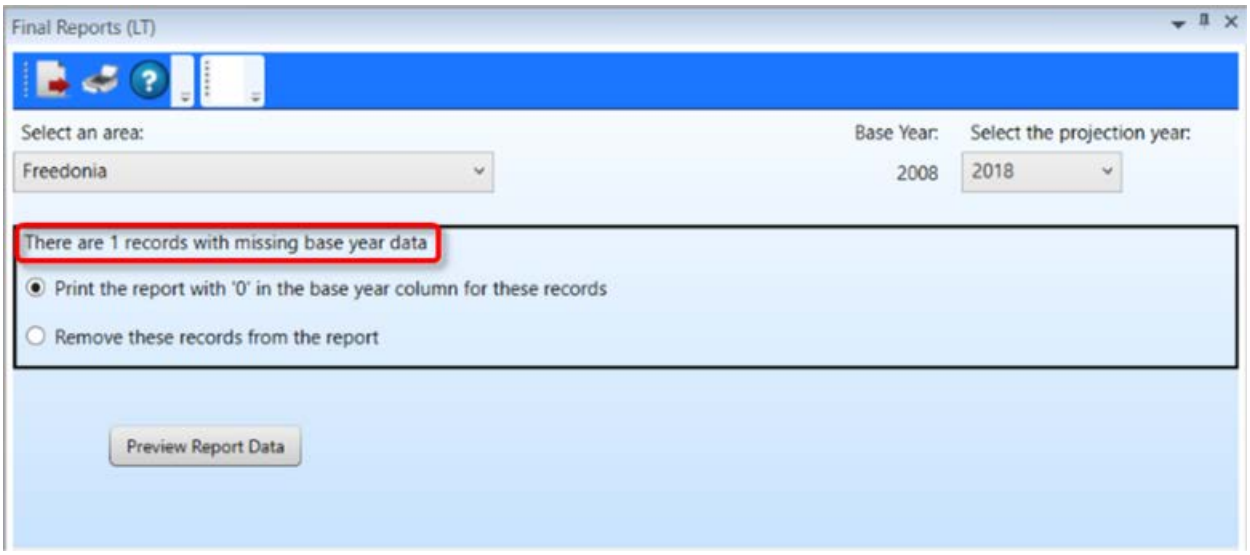


Figure 2: Status of records with missing base year data

3. Select the **Print the report with '0' in the base year column for these records** or the **Remove these records from the report** radio button.

View and Edit the Report

1. Click the **Preview Report Data** button. A data grid will be displayed with industry data from the selected area and projection year.

2. **Right click** a field and select **Edit** or **Delete** from the context menu. The Industry Title and any of the employment values are able to be edited.

NAICS Code	Industry Title	Base Year Employment	Projected Employment	Change In Employment	Percent Change
314000	Textile Product Mills	0		1,344	N/A
511100	Newspaper, Periodical, Book, and Directory Publishers	33,158		10,328	31.1 %
511200	Software Publishers	4,325	4,513	188	4.3 %
541100	Legal Services	57,163	76,487	19,324	33.8 %
541200	Accounting, Tax Preparation, Bookkeeping, and Payroll Se	49,281	61,226	11,945	24.2 %
541300	Architectural, Engineering, and Related Services	48,520	59,644	11,124	22.9 %
541400	Specialized Design Services	8,125	10,468	2,343	28.8 %

Figure 3: Data displays for viewing and editing

3. If **Edit** was selected, enter the desired value and **Tab** into other fields in the record if necessary.

4. Click on another record or press **Enter** to save changes.

☞Any changes are temporary and will not be saved to the database. They apply only to the current instance of the Final Report.

To hide the data grid, click the **Hide Preview** button**.**

To export the data**,** click the **Export** button on the Active Module Toolbar. To print the data, click the **Print** button.

Validate Data

Use the **Validate Data** module to validate and extract reports on the disposition of your data.

The Validate Data module is available in both Short Term and Long Term applications. The Short Term application validates monthly data. The Long Term Validate Data module allows you to validate annual data, and data for the entire United States. The Notebook is not available in the Long Term Validate Data module.

Screen Controls

- **Select an Area** drop-down menu
- **Filter** drop-down menu
- **Validate** button

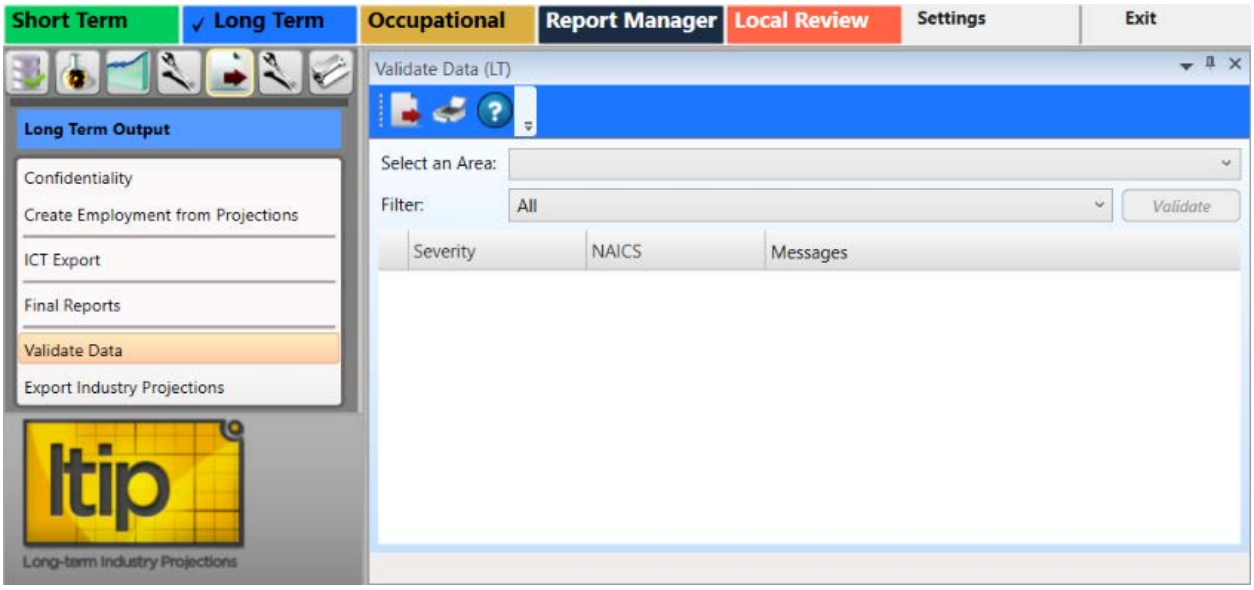


Figure 1: Validate Data module

Validate the Data

1. **Select an Area**.
2. Click the **Validate** button. The validation data errors will be displayed for All filters.

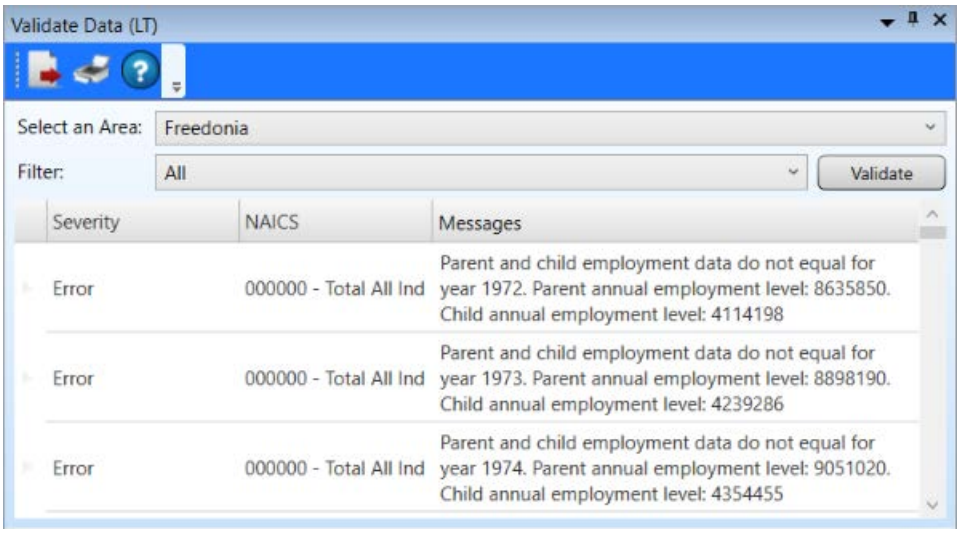


Figure 2: Errors listed for Freedonia

3. Select a **Filter** from the drop-down menu. Filter options are:

- All
- Industry has Annual Employment Data
- Sum of Child Annual Employment Equals Parent
- Industry projection Equals Child Projections
- Check for Missing Employment Data

After processing, you can the **Export** or **Print** options on the Active Module Toolbar to export or print the report. Use the **Notebook** to add any needed information in Short Term Industry Projections.

Export Industry Projections

The **Export Industry Projections** module allows the exporting of a specific area's industry projections to a spreadsheet file or directly into Report Manager.

The Export Industry Projections module is available in the Short Term and Long Term Projections applications. The Notebook is not available in the Long Term Export Industry Projections module.

Screen Controls

- **Export Data to File - Local Review Format** radio button
- **Export Data to File - Projections Review** radio button
- **Transfer Data to Report Manager** radio button
    - **Source Timeframe** drop-down menu
- **Source Area(s)** drop-down menu

Figure 1: Export Industry Projections module

Export Industry Projections

1. Select a **Source Area(s)** from the drop-down menu.
2. Select one of the three radio buttons, depending on the type of export required.

    1. Select the **Export Data to File - Local Review Format** or **Export Data to File - Projections Review** radio button.

2. Click the **Export** button on the Active Module Toolbar. A **Save As** dialog box will be displayed.

3. Enter a file name and select a location to save the file to.

4. Click **Save**.

Or

1. Select the **Transfer Data to Report Manager** radio button.

2. Select the **Source Area(s)** and **Source Timeframe** from the drop-down menus.

3. Click the **Export** button on the Active Module Toolbar.

4. Use the Browse Data menu selection in Report Manager to view the data.

Long Term Compare Menu Items

Long Term Compare Introduction

Use the **Long Term Compare** group menu to configure an Upload Area account, upload data, and create geographic comparisons.

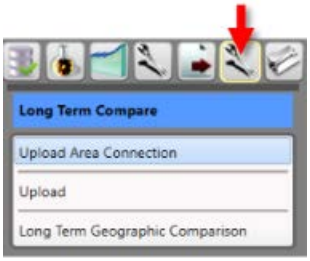


Figure 1: Long Term Compare group menu

The Long Term Compare group menu contains the following selections:

- Upload Area Connection
- Upload
- Long Term Geographic Comparison

Upload Area Connection

Use the **Upload Area Connection** module to configure an Upload Area account. Contact the Utah Projections Help Desk for help with setting up an Upload Area account. There should be only one registered analyst per state.

This module is available in the Short Term, Long Term, and Occupational Projections applications. The Notebook is not available in the Long Term Upload Area Connection module.

Screen Controls

- **Service URL** field
- **Email** field
- **Password** field
- **Connect** button

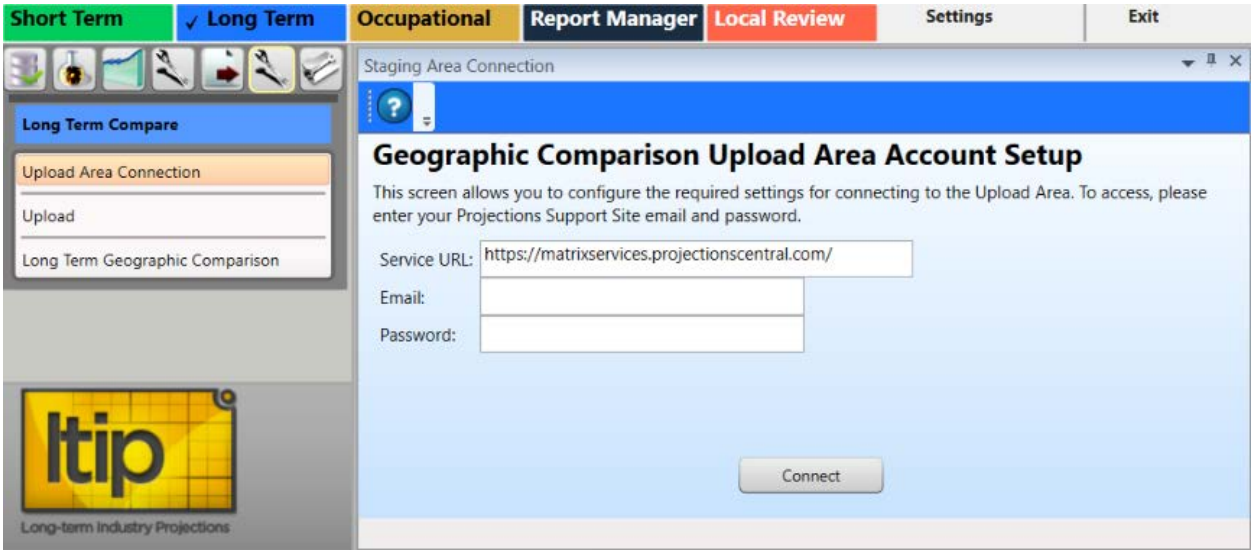


Figure 1: Upload Area Connection module

Login to Geographic Comparison Upload Area Account

1. Enter your **Projections Support Site email address** in the **Email** field.
2. Enter your **Projections Support Site password** in the **Password** field.
3. Click **Connect**. A Finished dialog box will be displayed if the connection is successful.
4. Click **OK** to return to the **Upload Area Connection** module.

☞If the connection is unsuccessful, the following message will be displayed:

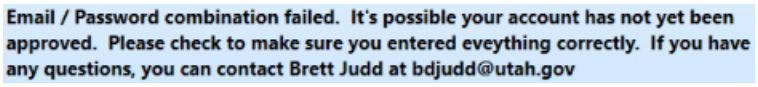


Figure 2: Connection failure dialog

5. Check your email address and password combination and try again. If multiple failures occur, contact the Utah Projections Help Desk for assistance.

Related Content

- Validation
- State Self Publish

Upload

Use the **Upload** module to select the source for your industry comparison. This module is available in the Short Term and Long Term applications. The Notebook is not available in the Long Term Upload module.

Screen Controls

- **Projection Suite Data** radio button
  - **State** drop-down menu
  - **Export To Upload Area** radio button
  - **Export To File** radio button
  - **File** field
  - **...** button
- **Import File** radio button
  - **Select file to import** field
  - **Browse** button
  - **Detected File Type** field
  - **Import** button

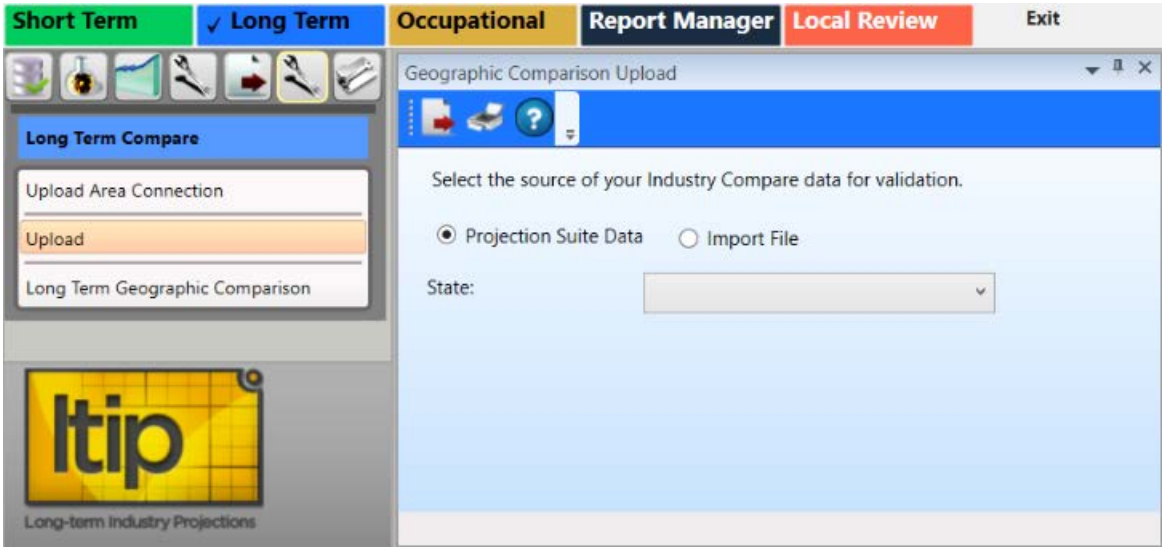


Figure 1: Upload module

Upload Industry Compare Data for Validation

1. Select the source.
   1. Select **Projection Suite Data**.
   2. Select a **State**. The data process and a validation dialog displays.

3. Select **Export To Upload Area** or **Export To File**. Export To Upload Area is not available if the validation fails.

4. If you selected **Export To Upload Area**, click **Send Compare Data**. A **Successfully Submitted all Projections** message displays.

5. Click **OK**.

Or

1. If you selected **Export To File**, select a **File** by clicking the **...** button. A Save As dialog will be displayed.

2. Select a name and location for the file, then click **Save**.

3. Then, on the Active Module Toolbar, click **Export**.

4. Click **Save**.

Or

1. Select **Import File**.

2. Click **Browse** and select a file to import.

3. Click **Import**.

4. Select **Export To Upload Area** or **Export To File**. Export To Upload Area is not available if the validation fails.

5. If you selected **Export To Upload Area**, click **Send Compare Data**. A **Successfully Submitted all Projections** message displays.

6. Click **OK**.

Long Term Geographic Comparison

Use the **Long Term Geographic Comparison** module to compare geographic data. You can create comparisons for:

- Compare to States
- Region Compare
- Workforce Compare
- Services Compare
- Goods Compare
- Compare to Nation

Data is stored in the Upload Area for all states which have submitted data. Long Term Geographic Comparison requires data from at least three states.

This module is available in the Long Term and Occupational Projections applications. It is important to make the distinction: the Long Term Geographic Comparison module under the Long Term application compares *industry* data; the Long Term Geographic Comparison module in the Occupational Compare group menu utilizes *occupational* data. The Notebook is not available in the Long Term Upload module.

> ☞If you do not have an Upload Area account, an error message displays. You are unable to make comparisons until you have the account set up. Reference the Upload Area Connection module for information on creating an account.

Screen Controls

- **Select the base state** drop-down menu
- **Geographic Comparison** button
- **Compare to States** radio button
- **Region Compare** radio button
- **Workforce Compare** radio button
- **Services Compare** radio button
- **Goods Compare** radio button
- **Compare to Nation** radio button
- **Available States** screen
- **Selected States** screen
- **Move Right** button
- **Move Left** button
- **All Right** button
- **All Left** button

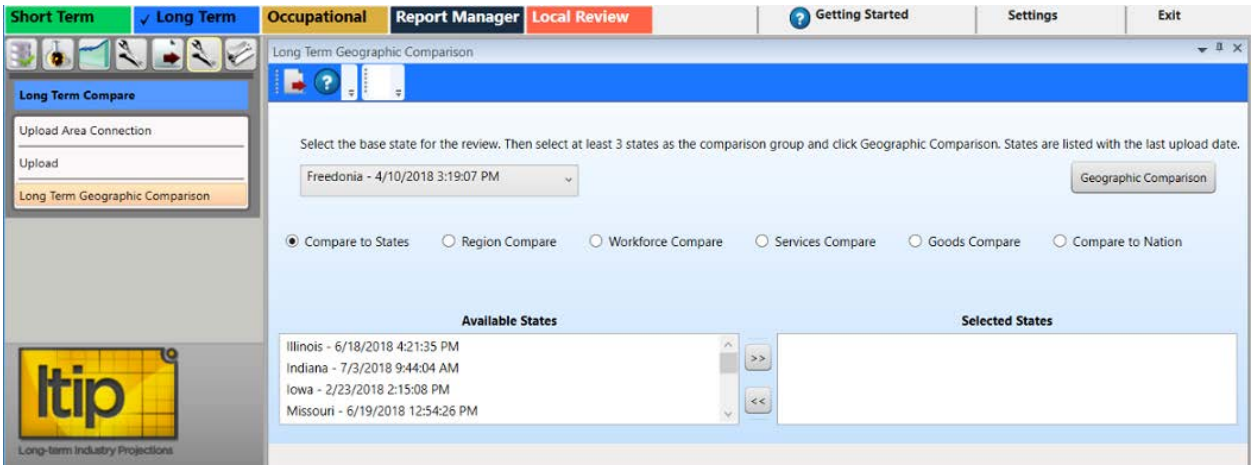


Figure 1: Long Term Geographic Comparison module

To generate comparisons from the Long Term Geographic Compare module, select the type of comparison using the radio buttons. Submitted data includes the state name and submittal date and time. The date and time is used to ensure data compared is the latest, most updated data.

Compare to States

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.
2. Select the states from the **Available States** box and move them to the **Selected States** box. Click the state then click the arrow button. Or, click the double arrow button to move all **Available States** to the **Selected States** box.
3. Click **Geographic Comparison**. When the comparison is complete, a message displays.
4. Click **OK**.
5. Click the **Export** icon in the Active Module Toolbar.
6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Region Compare

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.
2. **Select the Region for the comparison**.
3. Click **Geographic Comparison**. When the comparison is complete, a message displays.
4. Click **OK**.

5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Workforce Compare

1. Select the base state.

2. **Select the Workforce Quartile for the comparison**.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.

5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Service Compare

1. Select the base state.

2. **Select the Services Quartile for the comparison**.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.

5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Goods Compare

1. Select the base state.

2. **Select the Goods Quartile for the comparison**.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.

5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Compare to Nation

1. Select the base state.
2. Click **Geographic Comparison**. When the comparison is complete, a message displays.
3. Click **OK**.
4. Click the **Export** icon in the Active Module Toolbar.
5. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Related Content

- Geographic Comparison File Format

Long Term Utilities Menu Items

Long Term Utilities Introduction

The **Long Term Utilities** group menu enables a variety of maintenance functions within Long Term Industry Projections.

Figure 1: Long Term Utilities group menu

The Long Term Utilities group menu contains the following selections:

- Export Employment Series
- Export Variable Series
- Delete Area Employment
- Backup Database
- View System Log
- Check for Updates
- Update Database
- Add Step Ahead Table

Export Employment Series

Use the **Export Employment Series** module to create importable spreadsheets containing employment series data.

Screen Controls

- **Select an area** drop-down menu
- **Select a date range** spinners
  - **Max** button
- **Move** buttons

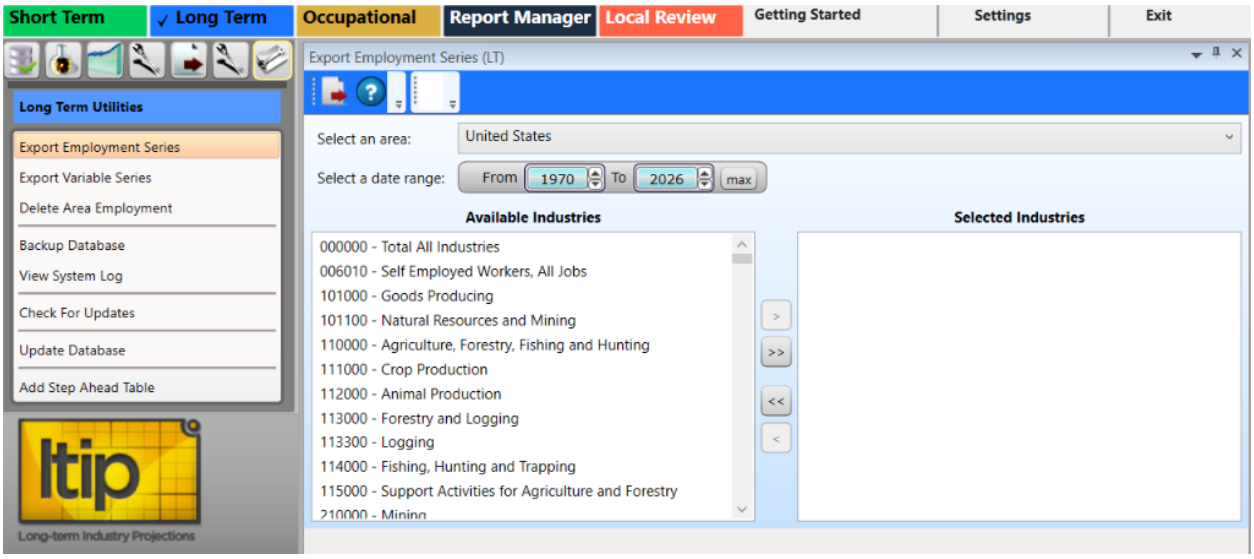


Figure 1: Export Employment Series module

Create an Employment Series Spreadsheet

1. **Select an area** from the drop-down menu.
2. **Select a date range** using the spinners.
   - Click **Max** to add the longest time frame possible.
3. Select industries from the table of Available Industries to add to the Selected Industries table.
   - Select the Available Industry, then **right click** with the mouse to add the industry to the Selected Industries table.
   - You can also use the **move** buttons to manipulate the contents of each table.
4. When you have finalized the list of Selected Industries, click the **Export** button in the Active Module Toolbar.

5. In the **Save As** pop up window, select a location for the file and enter a file name.
6. Click **Save**.

The spreadsheet contains the FIPS, area code, area type, date, and employment values for each industry selected.

Related Content

- Employment Spreadsheet Format 2 - Industries as Columns

Export Variable Series

Use the **Export Variable Series** module to export historical variable data. This module creates importable spreadsheets containing variable time series data. Variable data for areas is exported in the Long Term application.

Screen Controls

- **Select Area** drop-down menu
- **Select a data range** spinner
  - **Max** button
- **Available Variables** table
- **Selected Variables** table
- **Move** buttons

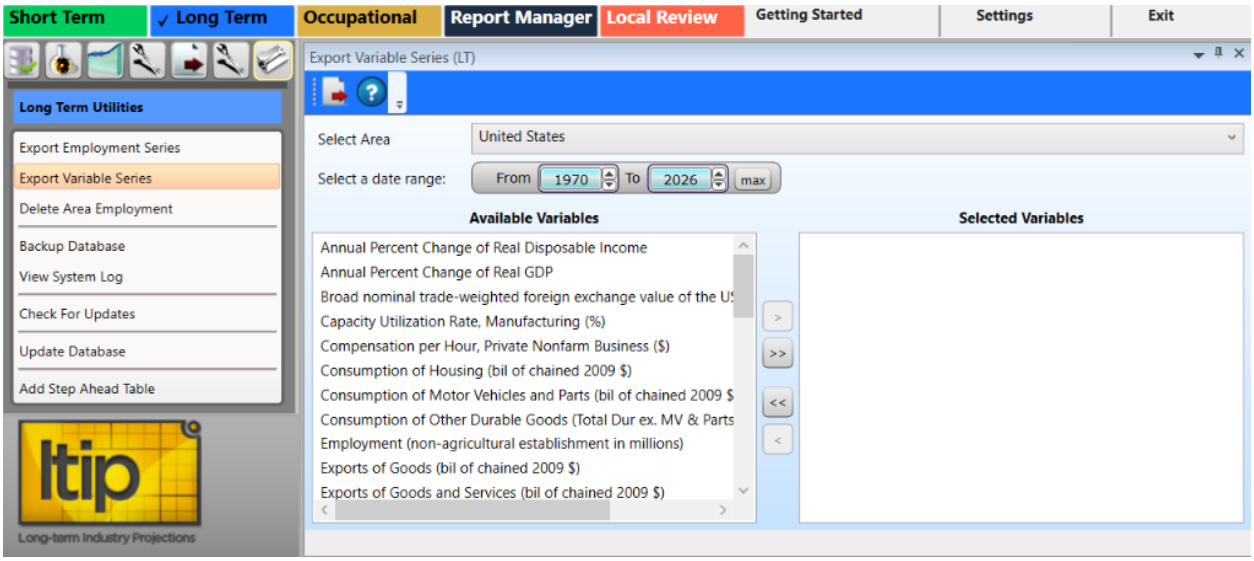


Figure 1: Export Variable Series module

Export Variable Data

1. Select an area from the **Select Area** drop-down menu.
2. **Select a date range** using the spinner controls.
   - Click the **Max** button to automatically select the longest time frame possible.
3. Select variables from the **Available Variables** table and click the **Move** button. The variable will be moved to the **Selected Variables** table.

- Use the additional move and move all buttons to move variables from the Available Variables table to the Selected Variables table, and vice versa.
- Right-clicking any variable opens a context menu which allows you to **Remove** or **Add Selected** (depending on which table you've right-clicked into), **Select All**, or **Unselect All** variables.

4. Click the **Export** button on the Active Module Toolbar. A **Save As** dialog box will be displayed.
5. Enter a file name and select the destination to save the file.
6. Click **Save**.

Related Content

- Variable Directory (LT)
- Review Variables (LT)

Delete Area Employment

The **Delete Area Employment** module enables deletion of all employment records for a selected area.

The Delete Area Employment module is available in the Short and Long Term Projections applications. The Short Term Delete Area Employment module deletes monthly data; the Long Term module deletes annual data.

Screen Controls

- **Select an Area** drop-down menu
- **Delete all employment for area** button

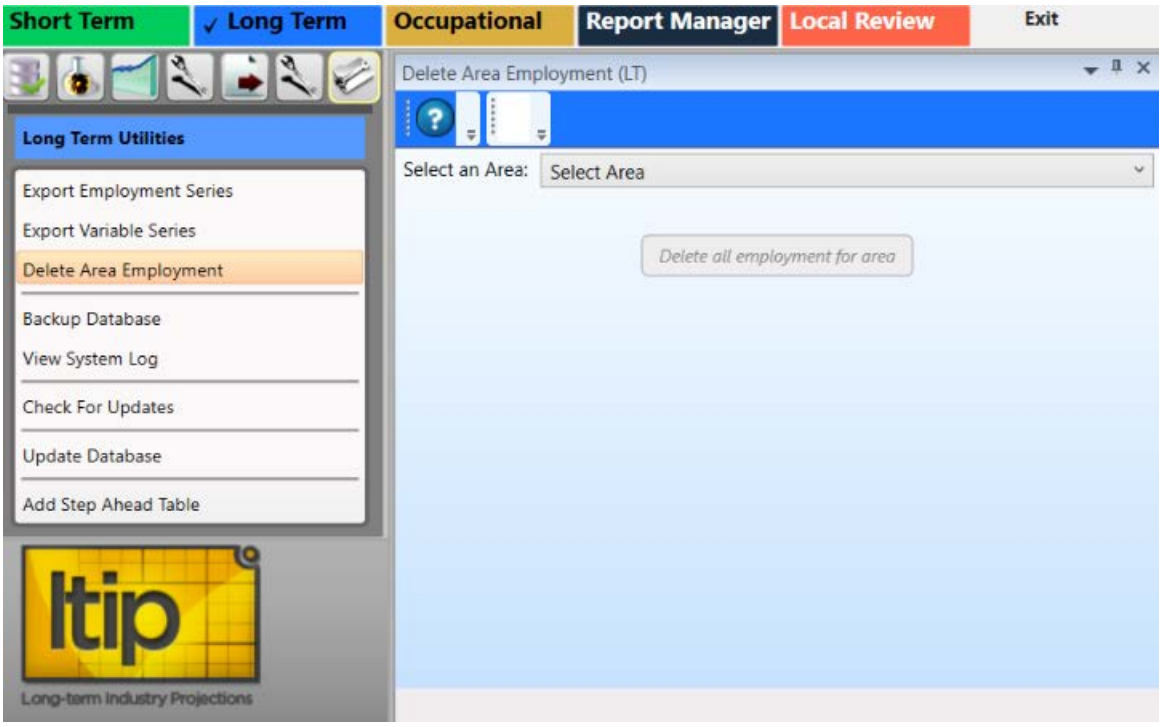


Figure 1: Delete Area Employment module

Delete Employment Records for a Specific Area

1. **Select an Area**.
2. Click the **Delete all employment for area** button. A **Delete area employment** dialog box will be displayed:

Figure 2: Verification of deletion of employment records

3. Click **Yes** to delete the records. Click **No** to keep the records.

Backup Database

Use the **Backup Database** module to create a copy or archive the existing data in the database so the information can be restored if needed.

Backup Changes in the Database

1. Click the **Backup Database** menu choice from the **Occupational Utilities** group menu. The backup process will begin immediately. When the backup is complete, the following screen will be displayed:

Figure 1: Backup Database dialog box

2. Click **OK**.

☞If there is an issue with the backup process, a Backup error dialog displays. Read the error information and click **OK** to close the window. Correct any errors and select the Backup Database module to try again.

Set a Backup Location

If there is no backup directory selected in the DB Setup Tool, an error will be displayed. To select a backup folder:

1. Double-click the Projections Suite Database Tool icon on your desktop, or navigate to it through the Start menu.

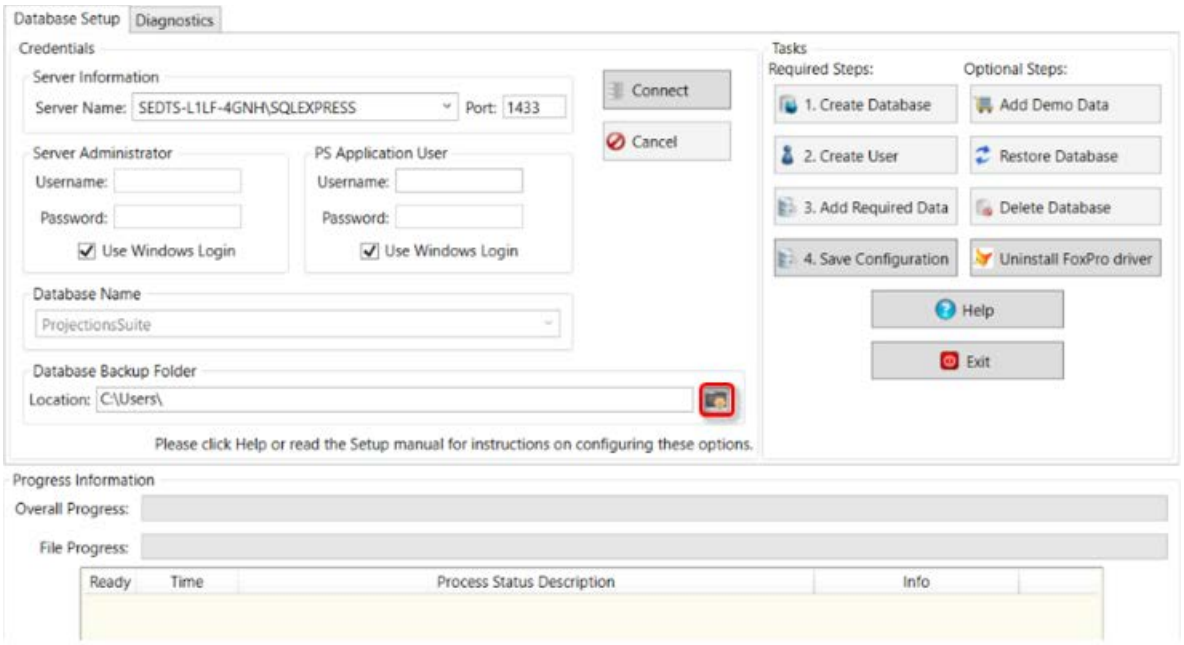


Figure 2: Projections Suite Database Tool, browse and select a database backup location highlighted

2. Click the **backup folder icon** in the DB Setup Tool.
3. Select a location for your database backup folder.
4. Click **OK**.
5. Click the (Step 4) **Save Configuration** button.
6. Exit the database tool.

Related Content

- Projections Suite Database Setup Tool

View System Log

The **View System Log** module is used in the event Projections Suite is not functioning properly. A copy of the System Log may be required to troubleshoot your Projections Suite environment. This module is available in Short Term, Long Term, and Occupational Projections.

View the System Log

1. Click the **View System Log** menu choice. Two dialog boxes will be displayed:
   - View System Log instructions dialog box, containing this message:

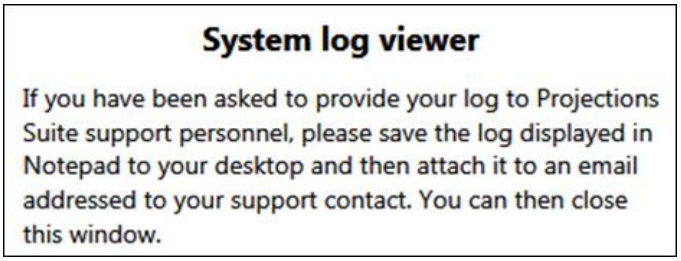


Figure 1: Instructions for sending the System Log to a support contact

   - Notepad log file containing the log information:

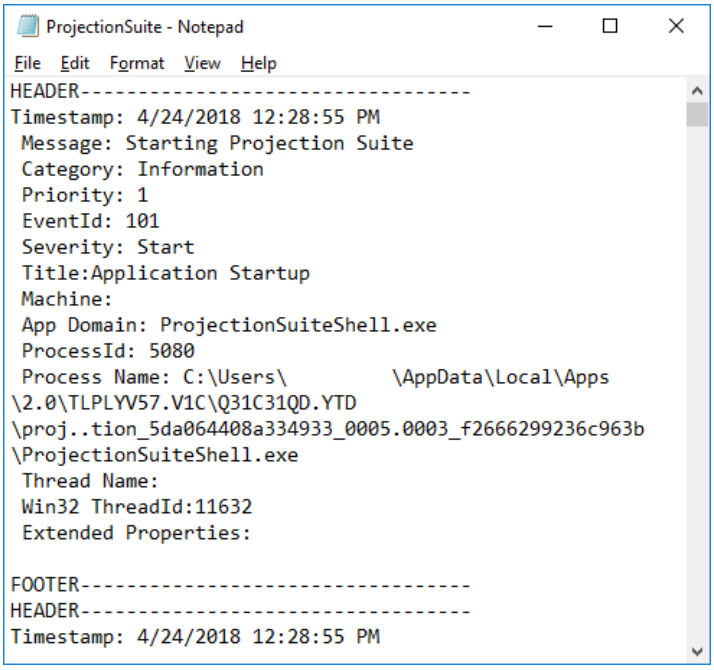


Figure 2: Projections Suite Log

Check for Updates

The **Check for Updates** module is available in Short Term, Long Term, and Occupational Projections. To check for updates to the Projections Suite application:

1. Select the **Check For Updates** option from the **Utilities** group menu.
2. Select the **Click here to check for updates** button. If the application is up to date, the following message will be displayed:

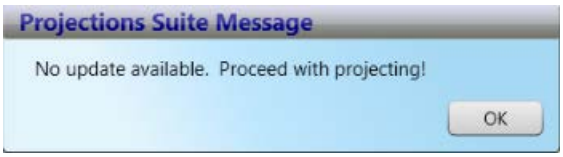


Figure 1: Projections Suite Message dialog box

Update Database

Use the **Update Database** module to update the Industry Directory with industries that are not in your directory. The Update Database module is the same in the Short Term and Long Term Projections applications. The Notebook is not available in the Long Term Update Database module.

Screen Controls

- **Update Industry Directory** button
- **Update Titles** check box

1. Select the **Update Database** module from the Long Term Utilities group menu. The Update Database module will be displayed.

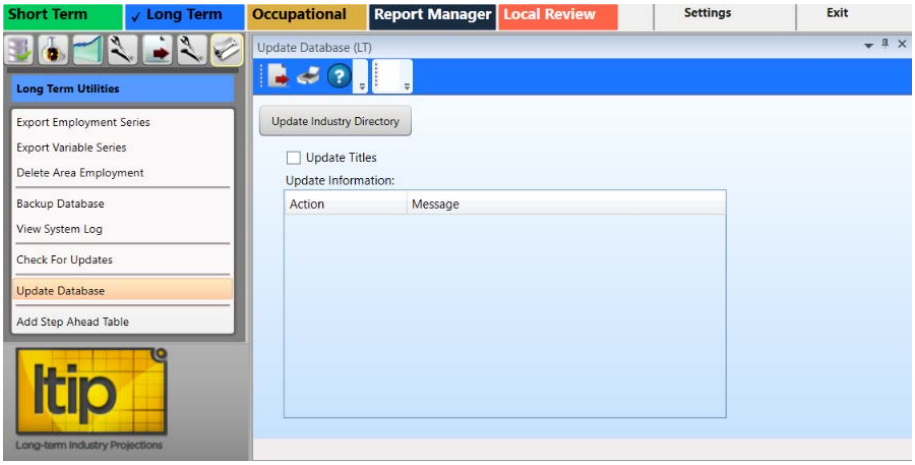


Figure 1: The Long Term Update Database module

2. To update the titles of industries in your directory, click the **Update Titles** check box. **If you use your own titles, do not select Update Titles**.

3. Click on the **Update Industry Directory** button. The Update Information table will display any system messages, or the following dialog box will be displayed:

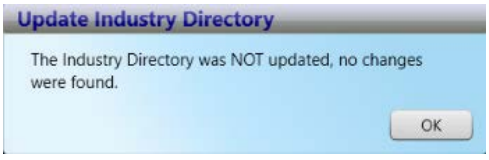


Figure 2: Update Industry Directory dialog

Add Step Ahead Table

The **Add Step Ahead Table** module creates a Step Ahead table for use in the Projections database. If the update option (Step3) in the Database Setup Tool has been run, the Step Ahead table will have been created. This module is an alternative way to create the table without involving the system administrator to run the Database Setup Tool.

Screen Controls

- **Create Step Ahead Table** button

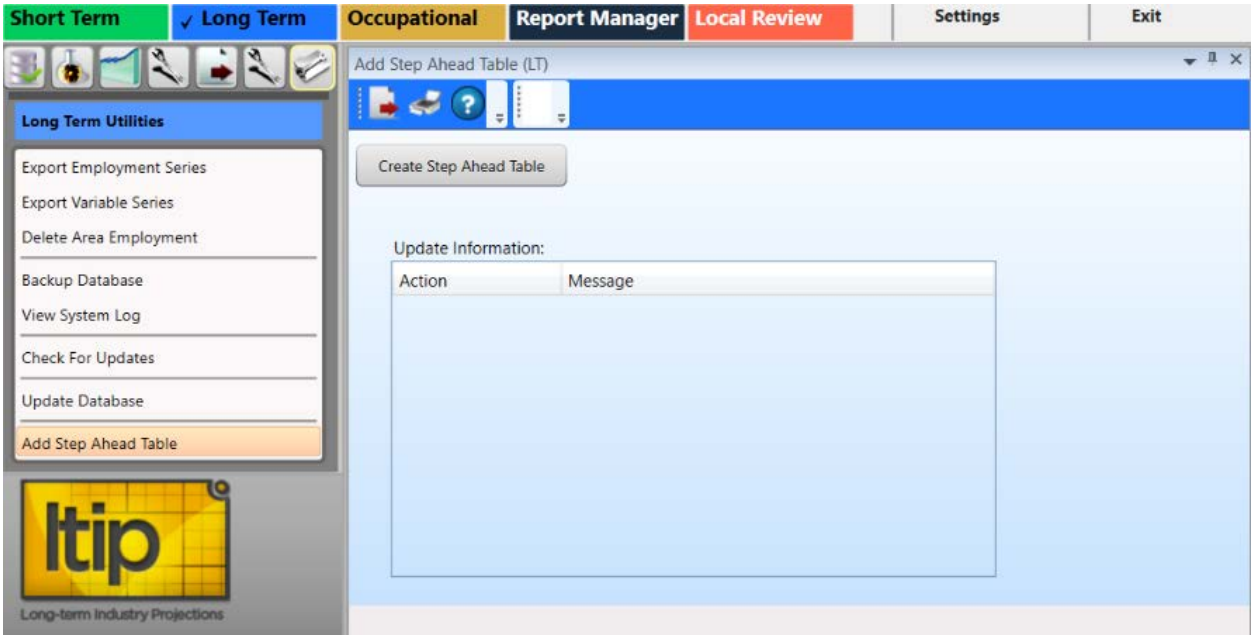


Figure 1: Add Step Ahead Table module

Create Step Ahead Table

1. Click the **Create Step Ahead Table** button. The Step Ahead table will be created.

2. If the Step Ahead table is already created, the following dialog box will be displayed:

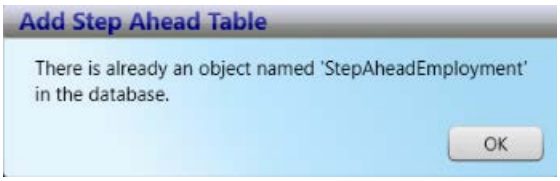


Figure 2: Add Step Ahead Table dialog box

3. Click **OK**.

Related Content

- Step Ahead

Occupational Projections

Occupational Projections Introduction

Occupational Projections (OP) provides analysts with information to make rational decisions regarding job training, education, and careers. The information is used by career counselors, students, job seekers, career changers, educators, and training officials. Projected staffing patterns are applied to industry projections, resulting in Occupational Projections.

Information on Occupational Projections is available on the Projections Central Support site, under Occupational Projections Resources. The OP Resources contains calculation procedures, national data files, and other helpful information. Use these resources to get started with Occupational Projections.

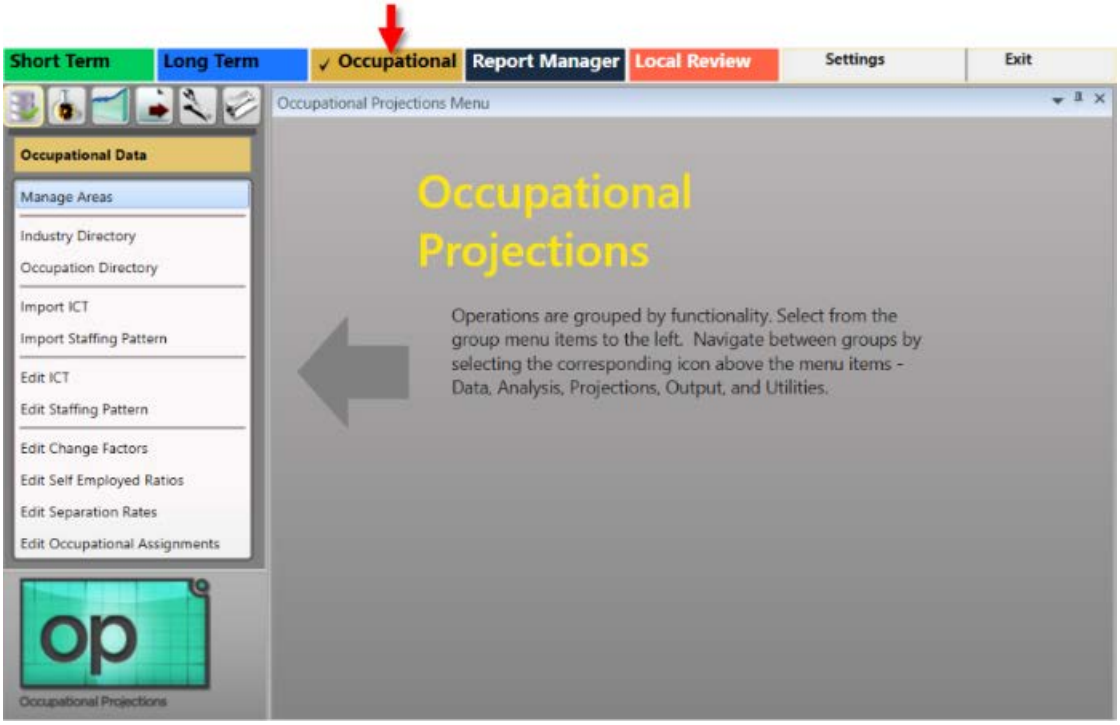


Figure 1: Occupational Projections application

There are six basic concepts used to calculate occupational projections:

- Occupational estimates by industry for the base year are used as the starting point.
- Occupational estimates of self-employed workers are added.
- Occupational estimates are then converted to a percent within each industry to create a staffing pattern.

- The forecasts of changes in occupational staffing patterns, known as change factors, are applied to the base year staffing patterns to calculate a projected year staffing pattern.
- State industry projections are then multiplied by the projected year staffing pattern, resulting in a projection for each occupation.
- Occupational openings, due to the need to replace workers leaving an occupation, are added to the projected change in the openings, resulting in the final estimate for separation rates.

The Occupational Projections application contains 40 modules under the following group menu selections:

- Occupational Data (F5)
- Occupational Analysis (F6)
- Occupational Projections (F7)
- Occupational Output (F9)
- Occupational Compare (F12)
- Occupational Utilities (F11)

Create an Occupational Projection

This section is meant to be an end-to-end guide for creating an Occupational Projection. Visit the Occupational Projections Resources page on the Projections Central Support website for additional, helpful information when producing Occupational Projections.

Produce Occupational Projections

1. Pre-Projection Decisions and Adjustments

These decisions and adjustments should be made before starting to produce Occupational Projections or forecasts.

Adjust Industry Employment to Match Industry and Ownership of OES Industries:

- Postal Service is classified by Industry and Federal Government Ownership. There may be small amounts of contracted Private Ownership Postal Services employment.
  - 491 Postal Service
  - 4911 Postal Service
- Educational Services are classified by Industry and Private, State Government, and Local Government Ownership. Educational Services is the sum of Private, State, and Local Educational Services employment. Subtract State and Local Government Educational Services from State and Local Government and add to Private Education Services.
  - 611 Educational Services
  - 6111 Elementary and Secondary Schools
  - 6112 Junior Colleges
  - 6113 Colleges, Universities, and Professional Schools
  - 6114 Business Schools, and Computer and Management Training
  - 6115 Technical and Trade Schools
  - 6116 Other Schools and Instruction
  - 6117 Educational Support Services

The Occupational Projections application uses the following to produce Occupational Projections and calculate annual average job openings:

- National Files
  - Change Factors, by Industry and Occupation
  - Self Employed Ratios, by Occupation
  - Separation Rates, by Occupation
  - Occupational Assignments for Education, Work Experience, and Job Training, by Occupation

- Long or Short Term Industry Based Year Employment Estimates and Projected Year Employment
- Staffing Patterns

The following files are pre-loaded in the Occupational Projections application under Occupational Data:

- Geographic, Industry, and Occupation Directories
- National Staffing Patterns - Run the Update Database module to populate when new national data is available.
- National Files

Manage Areas

- Area Set Up - predefined areas
  - States
  - Counties
  - Metropolitan Statistical Areas
  - Micropolitan Statistical Areas
- Area Set Up - user defined areas
- Area Groups - user defined grouping of existing areas

Directories

- Industry Directory

  Industry Codes cross-walked from NAICS codes. Use to review or adjust industries.

- Occupation Directory

  Occupational Codes cross-walked from SOC codes. Use to review or adjust occupations.

National Files

☞Changes can be made to these files but it is not recommended. If changes are made to the national files, the changes are used for every area that Occupational Projections are produced.

- National Change Factor File
  - Accounts for shifting occupational composition within an industry
  - National calculation for a 10-year period
  - If no factor is found, the factor defaults to 1.0
  - Applied to base year staffing pattern matrix
  - Apply resulting matrix to industry projection
- National Self Employment Ratios File
  - Includes primary and secondary workers

    - Ratio is applied to occupation total across all industries for base and projected years
- National Separations Rates File
    - Calculated for occupation total across all industries
    - Movement in and out of an existing occupation
- National Occupational Education and Training Assignments File
    - Education - 8 categories
    - Training - 6 categories
    - Work Experience - 3 categories
- National Staffing Patterns
    - National Matrix

2. Data Quality Check

- Before starting the Occupational Analysis module, run a Data Quality Check on both the Industry and Occupation tabs, and correct any errors.

3. Import Data

- If you use the Long Term or Short Term Projections Systems to produce industry employment projections, you do not need to import the ICT file. The file already exists in a subdirectory ready for use in the Occupational Projections system.
- If you are importing the ICT file, it must be in the right file structure. See the ICT Spreadsheet Format topic under the File Formats topic for an example of the file structure.
- Instructions for importing the ICT file are located under the Import ICT topic. **Important**: The ICT file must be in the Occupational Projections System before you import staffing patterns.
- The OES staffing patterns are exported from LEWIS in a file named mmexport.dbf. Instructions for extracting the file can be found at Extracting OES Staffing Patterns from EDS. The OES staff responsible for the LEWIS file should provide the file for use in the Occupational Projections System. It is recommended that the staffing patterns come from LEWIS.
- Import Staffing Pattern file into the Occupational Projections application. If there are errors, correct the errors then re-import the file. Imported staffing patterns will append or update existing records.
- Confidentiality Flags from the LEWIS file are maintained throughout the Occupational Projections application.

4. Check for Non-Matches

1. Use the ICT/Staffing Pattern Match module to check for non-matches by comparing the industry codes on the ICT file to the OES staffing patterns. All non-matches must be corrected before proceeding.

2. Copy Staffing Patterns - Staffing patterns can be copied from one geographic area to another area.

3. Delete the Staffing Pattern if there is no ICT Match. Use the Edit Staffing Pattern module to delete data.

Or

Add Base and Projected Employment to ICT. Use the Edit Staffing Pattern module to add data.

4. Rollup Staffing Pattern - Roll up staffing patterns to match the ICT.

5. Review and Edit Data

1. Review using ICT/Staffing Pattern Match.

2. Use Edit Staffing Pattern to add, edit, or delete.

3. Use Edit ICT to add, update, or delete Industry base year employment and Industry Projections. Primary and secondary confidentiality flags can be selected in this module. If an industry is checked for confidentiality, all occupations will be confidential for that industry when projections are calculated.

6. Develop Occupational Projections

1. Calculate Projections.

- Select **Industries View** and the **Industry Totals** tab, then click **Calculate Projections**. Projections for *all occupations in all industries* are calculated.
- Select **Industries View** and the **Occupations Within Industries** tab, then click **Calculate Projections**. Projections for *occupations only in the industry selected* are calculated.

2. Calculate Self Employed - You can add values or select **Create ICT records** to add them.

3. Reconcile - Reconcile projections forces employment to ICT totals.

4. Aggregate - Click **Process** to calculate survey-level replacements and aggregate survey-level replacement to summary levels.

7. Diagnostic Exports

1. Use Diagnostic Exports to export outputs.

Occupational Data Menu Items

Occupational Data Introduction

The **Occupational Data** group menu enables the management of areas, industries, and occupations. Importing of data, manipulation of data, and review tools are also available.

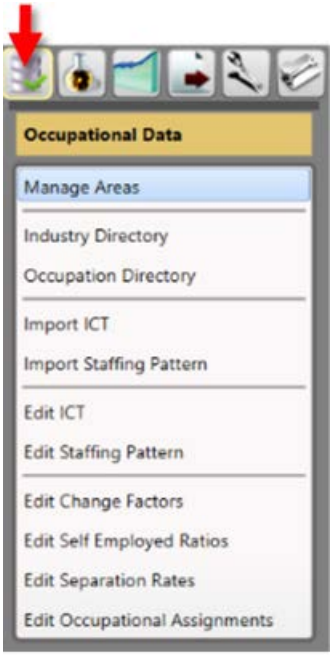


Figure 1: Occupational Data group menu

The Occupational Data group menu contains the following selections:

- Manage Areas
- Industry Directory
- Occupation Directory
- Import ICT
- Import Staffing Pattern
- Edit ICT
- Edit Staffing Pattern
- Edit Change Factors
- Edit Self Employed Ratios
- Edit Separation Rates
- Edit Occupational Assignments

Manage Areas

Use the **Manage Areas** module to select and customize areas for Industry and Occupational Projections. Manage Areas organizes the basic geographical areas your projections will be calculated from. You can select your state, add or change area types, add sub-state areas, and create Area Groups. Area Groups are used in sub-state projections and the Project Multiple Regions (ST and LT) modules.

The Manage Areas module is available in the Short Term, Long Term, and Occupational Projections applications. The changes you make in any of these modules populates throughout the applications.

Screen Controls

Area Setup section

- **Right Click Context Menu** (United States)
  - **Show All States**
  - **Hide Unchecked States**
- **Right Click Context Menu** (state)
  - **Show All Area Types**
  - **Show Area Types with Areas**
  - **Add Area Type**
  - **Create Area Group**
  - **Print Area Types**
  - **Print Areas**
  - **Print Area Groups**
- **Right Click Context Menu** (Substate)
  - **Add Area**
  - **Edit Area Type**
  - **Print Area Types**
  - **Delete Area**

Area Groups section

- **Right Click Context Menu** (Highest Level)
  - **Delete Area Group**
  - **Print Area Groups**
- **Right Click Context Menu** (Substate)
  - **Delete Area Group Member**

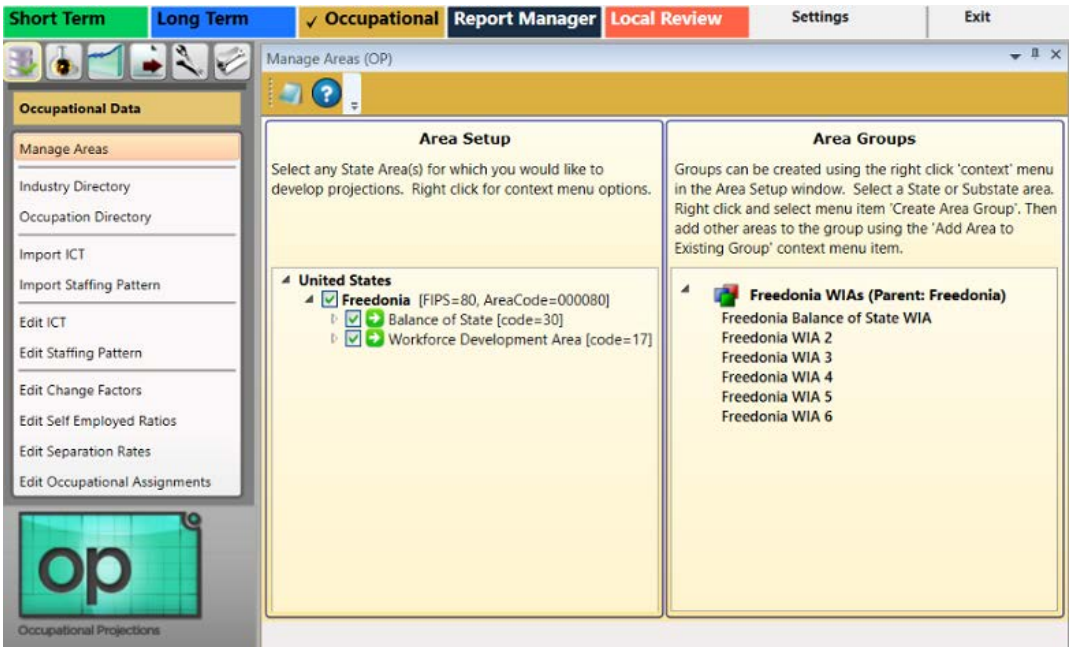


Figure 1: Manage Areas module

Area Setup Section of the Screen

1. **Right click** the **State Area** you want to work with to open its context menu.

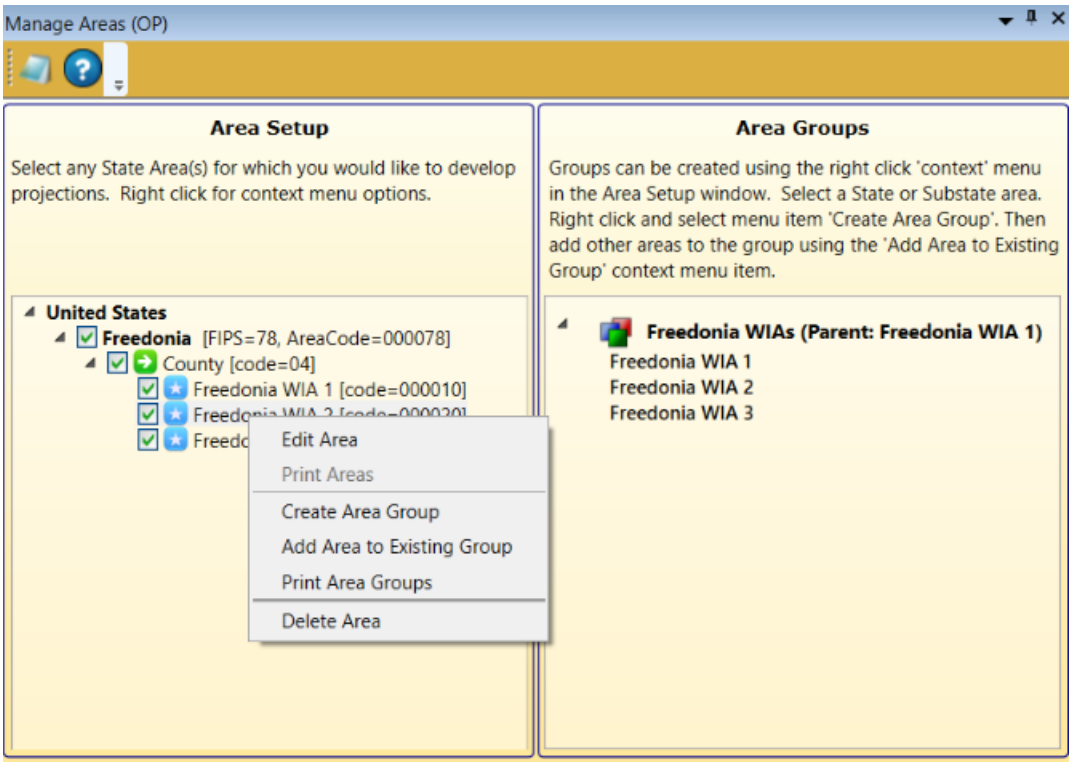


Figure 2: Context menu for working with State Areas

Depending on the changes needed to this area, click the appropriate option from the following:

- Edit Area
- Print Area
- Create Area Group
- Add Area to Existing Group
- Print Area Groups
- Delete Area

Edit an Area

1. Click **Edit Area**. The Edit Area dialog box will display:

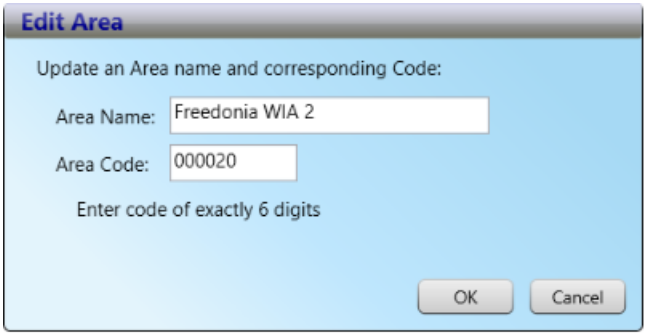


Figure 3: Edit Area dialog box

2. Change the **Area Name** and/or **Area Code**.
3. Click **OK**.

Print Areas

1. Select **Print Area Groups** from the context menu. This menu choice is accessed by right-clicking the second highest level (Freedonia, in this example) in the **Area Setup** section. The **Print Preview** screen will be displayed.

2. Click the **Print**  icon to print the area's data.

Create an Area Group

1. **Right click** on the 2nd level in the **Area Setup** screen section.

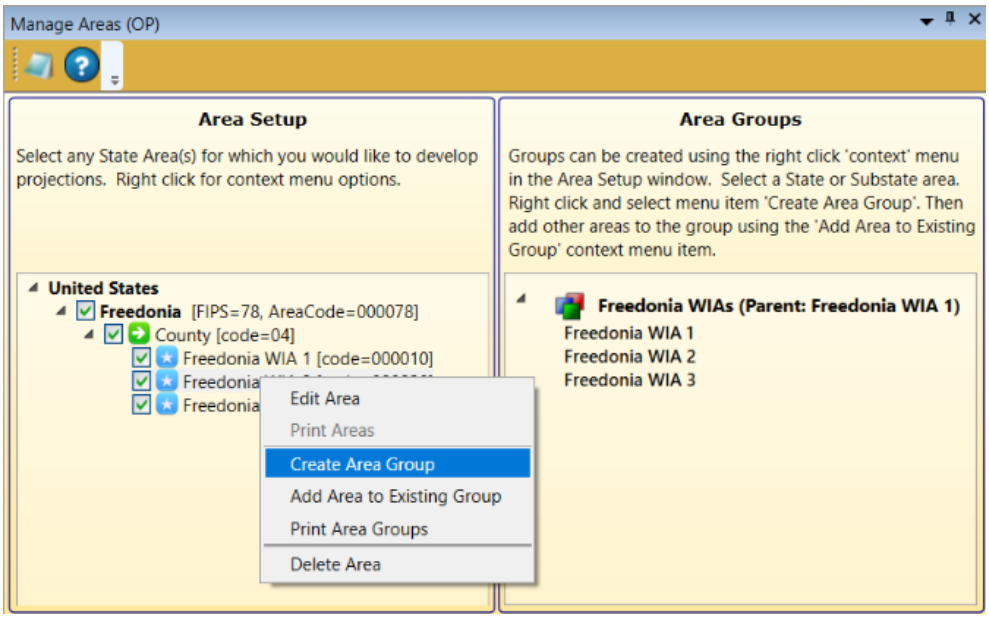


Figure 4: Create Area Group, to add to the Area Groups screen section

2. Click **Create Area Group**. The **Create Area Group** dialog box will be displayed:

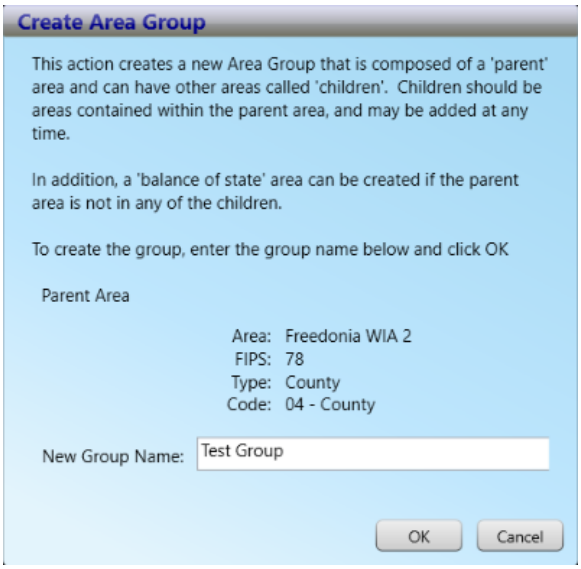


Figure 5: Create Area Group dialog box

3. Name the new **Area Group**.

4. Click **OK**. This will add the new Area Group (named Test Group, in this example) to the **Area Groups** section of the screen.

Figure 6: The new Area Group (Test Group) is added

5. Continue adding areas to the Area Group by **right-clicking** and selecting **Add Area to Existing Group** from the context menu. Select a group from the drop-down menu to add the area to the Area Group, then click **OK**.

Delete Area

1. **Right click** on the area to select it.
2. Select **Delete Area**. The following dialog box will be displayed:

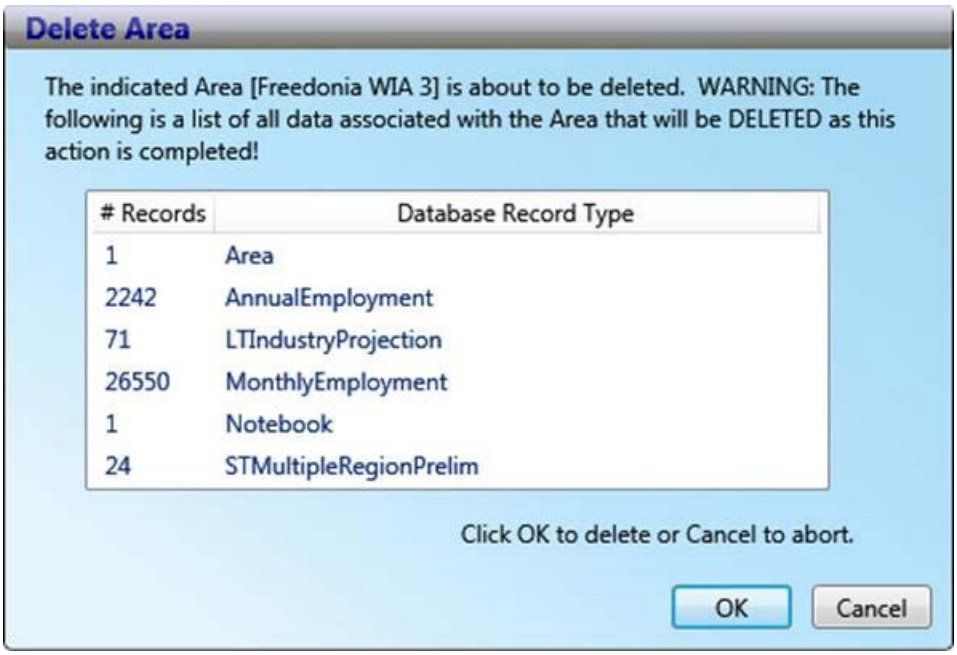


Figure 7: Delete Area dialog box

3. To delete the area, click **OK**. Click **Cancel** to keep the area.

Delete an Area Group

1. **Right click** the **Area Group** to select it for deletion.

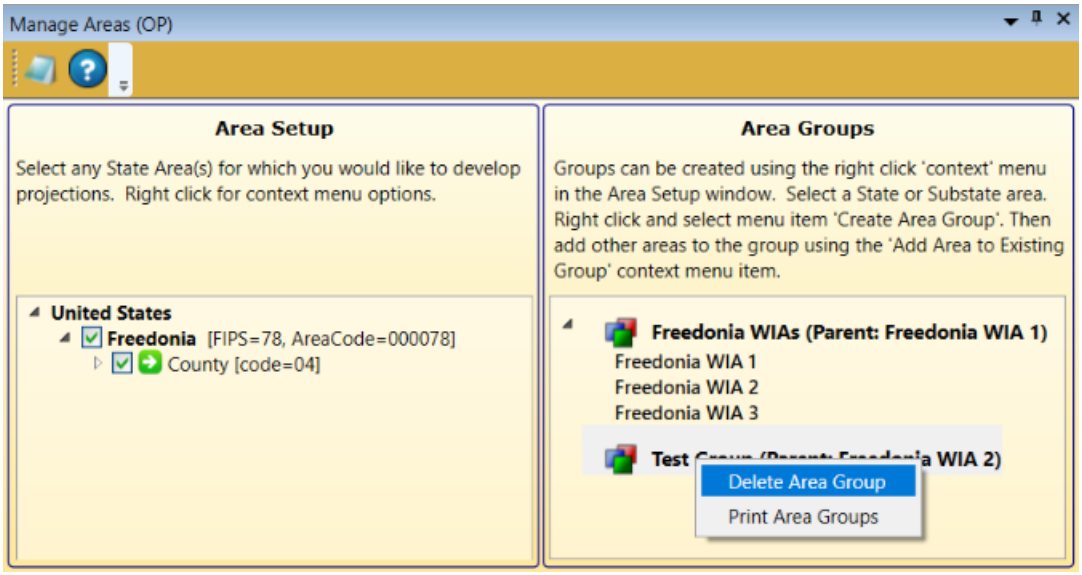


Figure 8: Delete the Area Group, Test Group

2. Select **Delete Area Group** from the context menu. You will be prompted to confirm the deletion.
3. Click **OK** to confirm. Click **Cancel** to keep the Area Group.

View Area Types

It may be helpful to view the various area types when initially setting up your Projections software, to determine the best way to classify your areas. To view all area types:

1. **Right click** your state and select **Show All Area Types**. This will list all of the area types and their associated codes in the Area Setup section.

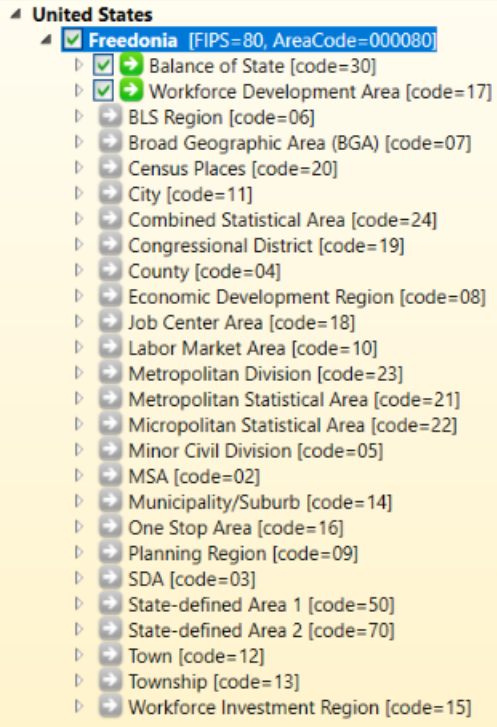


Figure 9: All area types

2. When you are finished, close the list by **right-clicking** your state and selecting **Hide Area Types With No Areas** from the context menu.

Related Content

- Create Balance of Area
- Review Areas
- Project Multiple Regions (ST and LT)
- Area Format

Industry Directory

Use the **Industry Directory** as a resource for information about specific industries, listed by NAICS. The Industry Directory lists all valid industry codes and titles in a tree view. All Projections Suite applications use it for defining industries. A default Industry Directory is installed with the Projections Suite.

Analysts can modify the directory as needed for your state. However, the position of industries in the industry tree is critical. When adding or moving industries, ensure you place them correctly within the parent industry. Industry placement will affect aggregation of employment data in later projections steps.

The Industry Directory module is available in the Short Term, Long Term, and Occupational Projections applications. The same screen displays in each application.

Screen Controls

- **Print all industries** check box
- **Search for** field
- **Find** button
- **Expand/Collapse** arrows

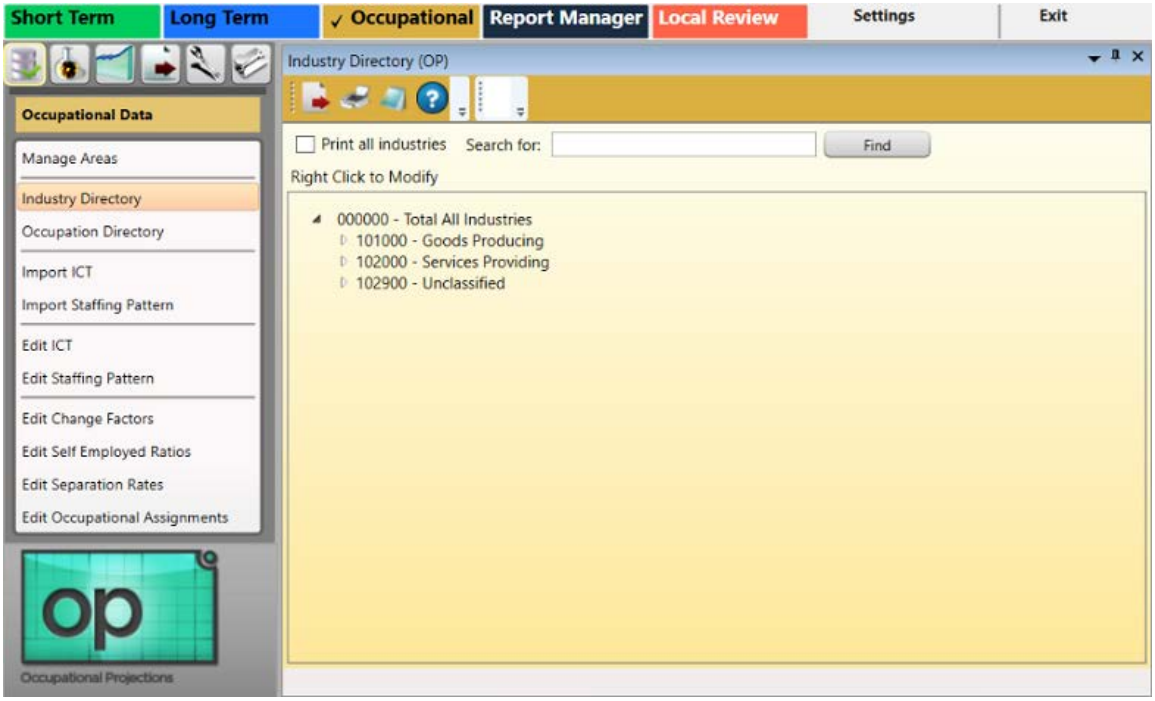


Figure 1: Industry Directory module

The **Total All Industries** code is displayed at the top of the tree. Beneath **Total All Industries** are the NAICS codes for Super-Sectors (2-digit), sectors (3-digit), and detailed industries (4 - 6 digit).

Manually Expand/Collapse the Industry Hierarchy

1. Click the **Expand** icon next to the general category of the industry. The category will expand one level.
2. Continue clicking the expand icons in that category until the desired industry level is displayed.
3. Click the **Collapse** icon on the category header to collapse to that level.

Use the Search Tool

1. Click into the **Search for** field.
2. Type an industry description or industry code.
3. Click the **Find** button or press **Enter**. The designated industry will be displayed if it is listed in the industry hierarchy.

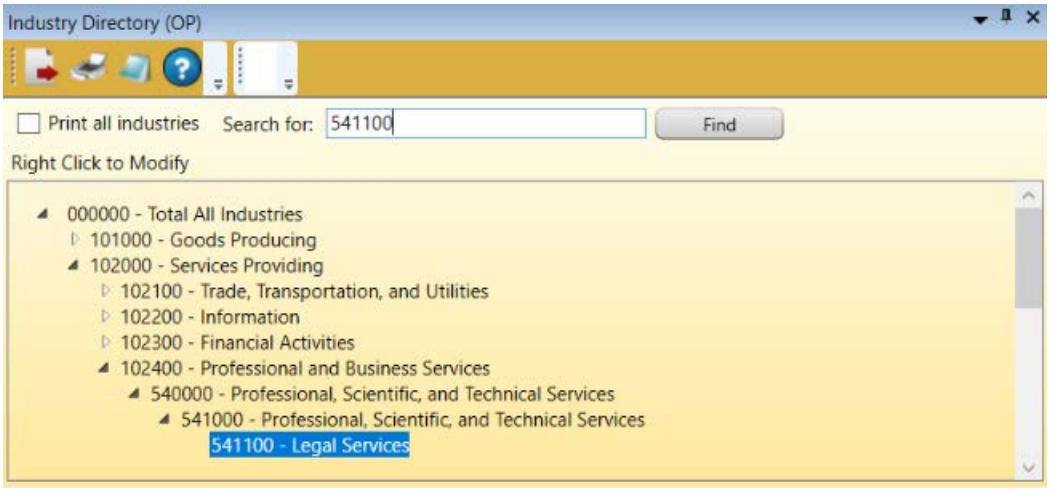


Figure 2: Using the Search for field

Figure 3: Use a description to find an industry

Additional Options in the Industry Directory

There are various options in the Industry Directory to help customize industries. To customize the Industry Directory:

1. **Right click** on an entry in the Industry Directory. Depending on which industry level you've selected, one of two context menus will be displayed.

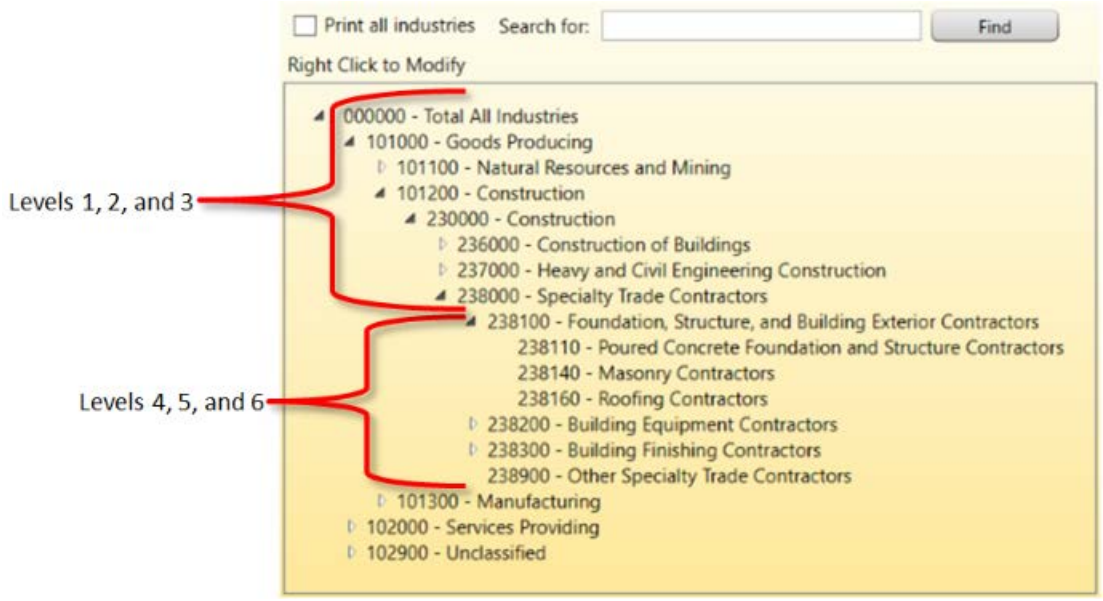


Figure 4: Industry Directory breakdown

The context menus contain the following items:

- **Expand all children** will expand the selected entry to the sixth level.
- **Collapse all children** will collapse all entries within the selected entry.
- **Add** enables the addition of new industries to the selected entry. Ensure their placement is correct to avoid future aggregation issues.
- **Cut** will remove the selected entry and copy it to the clipboard for pasting into another area.
- **Delete** will delete the selected entry.
- **Edit** enables editing of a selected entry.
- **Move** allows the selected entry to be moved to another location in the directory.
- **Paste** will paste a previously cut industry into another area in the hierarchy.

Occupation Directory

The **Occupation Directory** is a resource to locate specific occupations and their SOC (Standard Occupational Classification) codes. The Occupation Directory is used to review, edit, or add the occupations that are used as part of the projections process.

Screen Controls

- **Print all occupations** check box
- **Expand/Collapse** arrows
- **Search for** field

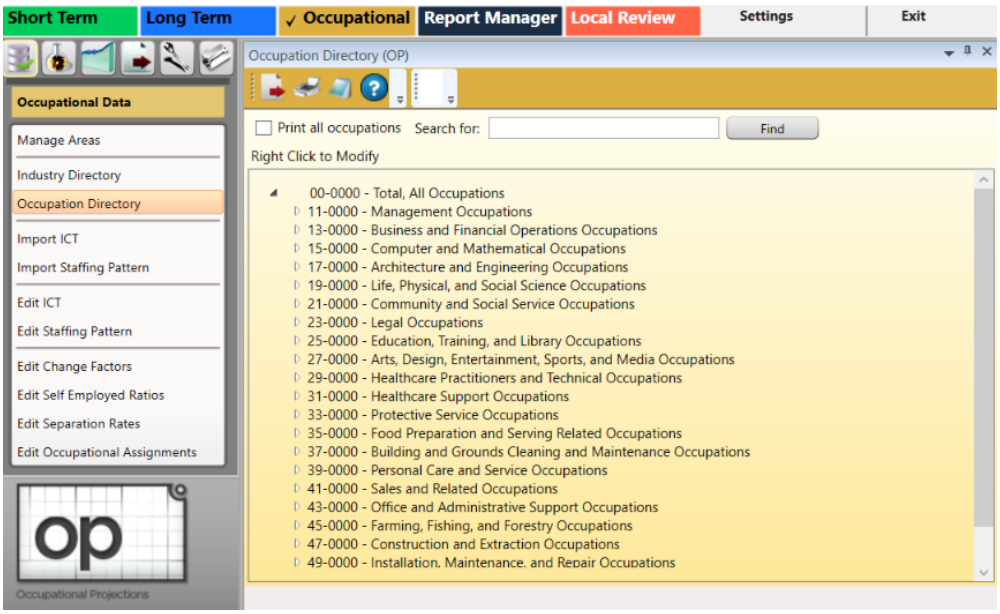


Figure 1: Occupation Directory module

Manually Expand/Collapse Icons

1. Click the **Expand** icon next to the general category of the desired occupation. The general category will expand one level.

2. Continue clicking on the expand icons until the desired Occupation **Level** is displayed.

3. Click the **Collapse** icon on the category header to collapse to that level.

Use the Search For Tool

1. Click the **Search for** field.

2. Type the description or the code for an occupation.

3. Click **Find**. The designated occupation will be displayed, if it is listed in the data.

Add an Occupation

1. Find a **Parent Occupation** for the new **Occupation** to be added under.

2. **Right click** the major or minor group, which will designate it as the **Parent Occupation**.

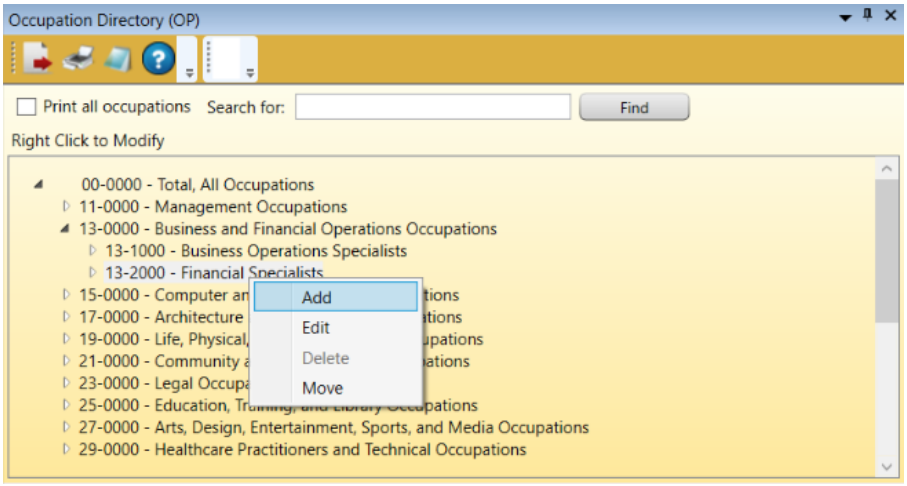


Figure 2: Add a new occupation under its Parent Occupation

3. Click the **Add** option from the context menu. The **Add Occupation** dialog box will be displayed:

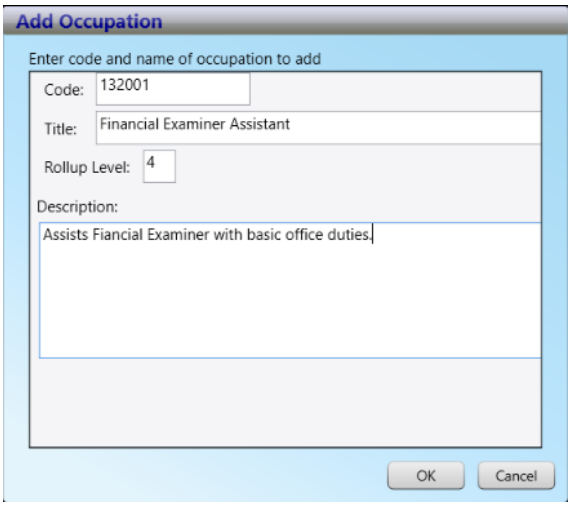


Figure 3: Add the Financial Examiner Assistant occupation

4. Enter the new occupation's **Code**, **Title**, and a **Description**. Make the code unique and consistent with its parent's code. The code must be six digits.

5. Click **Save**.

Edit an Occupation

1. **Right click** the occupation and select **Edit**. The **Edit Occupation** dialog box will be displayed.

2. Make changes to the Code, Title, Rollup Level, and Description.

3. Click **Save**.

Delete an Occupation

1. **Right click** the occupation to be deleted.

2. Select **Delete**. The **Delete Occupation** dialog box will be displayed:

3. Click **Confirm** to delete the occupation. Click **Cancel** to keep the occupation.

Move an Occupation to a New Parent

1. **Right click** the occupation you want to move.

2. In the **Move Occupation** box, select the **new parent** from the drop-down menu.

3. Click **Save**.

Print Occupations

1. Select the **Print all occupations** check box.

2. Click the **Print** icon on the Active Module Toolbar. An Occupation Directory Tree report will be generated in the Print Preview window.

3. Click the **Print** icon in the Print Preview window to send the report to the printer.

Related Content

- Edit Occupational Assignments

Import ICT

Import ICT imports Industry Control Total (ICT) data needed for the **Edit ICT** module in Occupational Projections. After the file is imported, it generates a report of records which lists missing, incomplete, or corrupted data.

Industry Control Total data is a fixed wage and salary employment total for an industry. Occupational employment in the industry must add up to the ICT.

To use Occupational Projections, you must have ICT data and staffing pattern data. The ICT data can be produced in the Short or Long Term Projections modules, or can be imported from an external source.

☞Click here for the ICT file format description.

Screen Controls

- **Select file to import** field
- **Detected file type** field
- **Browse** button
- **Import** button

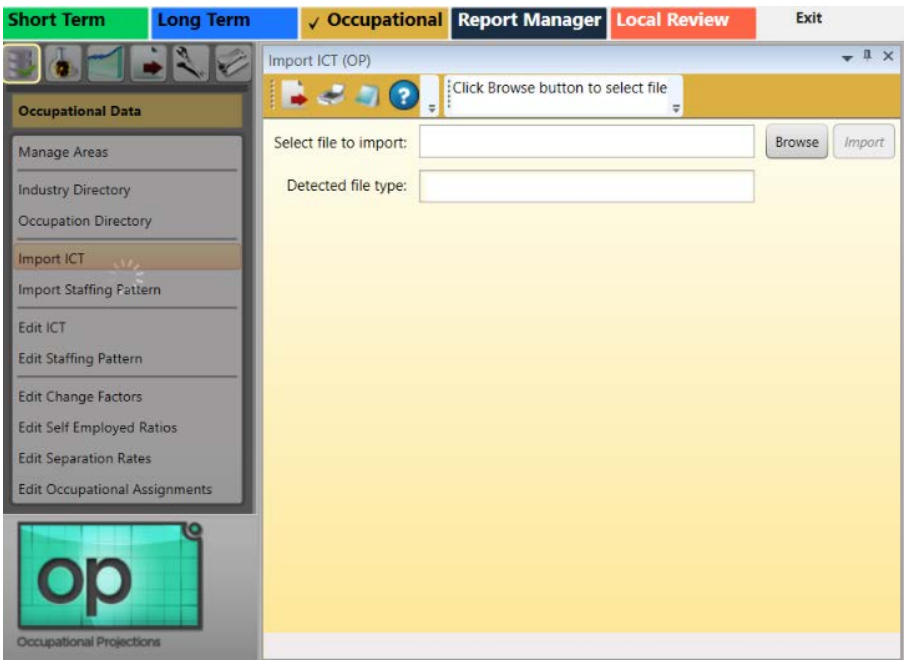


Figure 1: Import ICT module

Import ICT Data

1. Click **Browse**.
2. Locate and select the data file to import.
3. Click **Import** to load the file. When the data is imported, the **Import Spreadsheet** dialog box will display the results of the import.

Figure 2: The Import Spreadsheet dialog box reports the status of the import

4. 4 of the 26 records in the imported data are invalid. Choose **Yes** to import the valid records, or **No** to cancel the import.

☞All records without errors will be imported. When the file is imported, any existing data is **updated** with the contents of the import file. **This enables you to retain the data you had previously, and add new data to the existing data**.

When the data has been imported, the **Import Spreadsheet** dialog box will display again to indicate a successful importation.

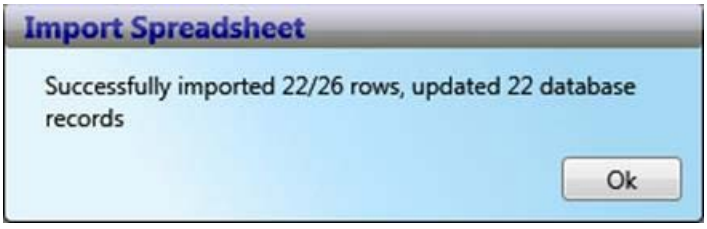


Figure 3: 22 out of 26 rows were imported

5. Click **OK** after reading the message. The **Import ICT** screen will display again and will now display detailed information about any errors encountered during importation.

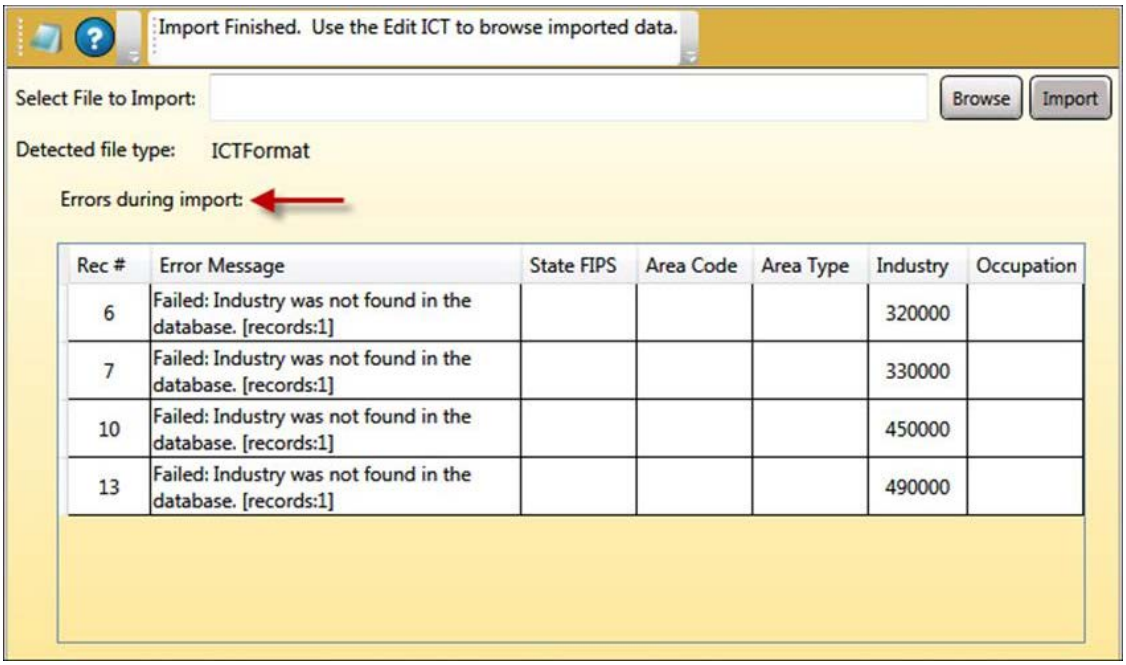


Figure 4: Import errors

☞Records that have an area that is not found can be added to an area using the Manage Areas module. You can update an existing area by updating the area code, the state FIPS, or area type as needed. Alternatively, you can update the input file itself to match the area definitions currently in the system. You can do the same thing with the industries that are not defined at this time. Either add them to the Industry Directory, or update the import file so they are a known industry.

☞Take note of the message in the Active Module Toolbar field at the top of the screen. The imported data isn't displayed in this screen; it is visible and able to be edited in the Edit ICT module.

Related Content

- ICT Spreadsheet Format
- Edit ICT

Import Staffing Pattern

The **Import Staffing Pattern** module imports staffing pattern data. There are four file types the Import Staffing Pattern section handles:

- Import LEWIS FoxPro
- Import LEWIS Excel
- Import BLS FoxPro
- Import Spreadsheet

To use the Occupational Projections system, you must have ICT and staffing pattern data.

If the ICT file has two-digit or three-digit industry data, then the four-digit staffing patterns is combined and summed to the appropriate industry. Some industries are not rolled up. These are 113 and 115. These industries are not rolled up because OES does not survey the other four-digit sibling industries, and therefore, they are not included in the LEWIS file. Use the Analysis Category, Rollup Staffing Pattern module to deal with these industries.

The **Base Year** and **Projected Year** are set up in the Projections Suite settings, Occupational Projections section.

Screen Controls

- **Import LEWIS FoxPro** tab
- **Import LEWIS Excel** tab
- **Import BLS FoxPro** tab
- **Import Spreadsheet** tab
- **Import Staffing Pattern** selection tabs
- **Browse** button
- **Import** button
- **Base Year** entry field
- **Projected Year** entry field
- **State Fips** entry field
- **Rollup to ICT data** check box

To import staffing pattern data, select the **Import Staffing Pattern** module. The Import Staffing Pattern screen will be displayed, with four selection tabs.

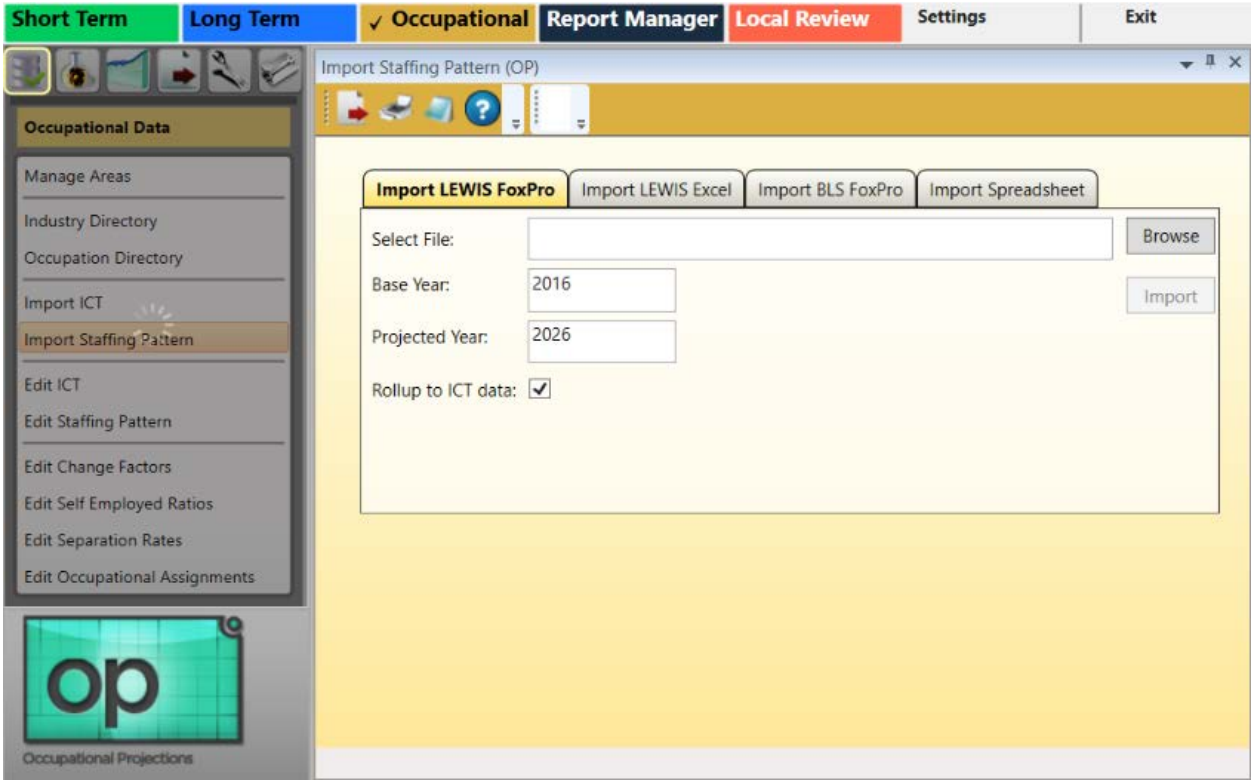


Figure 1: Import Staffing Pattern module

Import LEWIS FoxPro Data

1. Click the **Import LEWIS FoxPro** selection tab.
2. Set a **Base Year** and **Projected Year**.
3. Click **Browse** to find the file containing the needed data.

☞The file must be a Database file (.db, .dbf, etc.). For more information on the LEWIS FoxPro spreadsheet format, click here.

4. When the file is found, select it and click **Open**. Validation of the data will occur before it is imported. The **Import Staffing Pattern** screen displays with the file to be imported listed in the **Select file** field.
5. Select the **Rollup to ICT data** check box to roll up the industry data to match the industries in the ICT file.
6. Click **Import**. The **Import Spreadsheet** dialog displays when the import completes.

Figure 2: Details of the imported data

7. Click **OK**. The **Import Staffing Pattern** dialog box will confirm importation of the data.

☞If there are errors in the file, a message will be displayed with error details. Correct the errors and re-import the file.

Import LEWIS Excel Data

1. Click the **Import LEWIS Excel** tab.

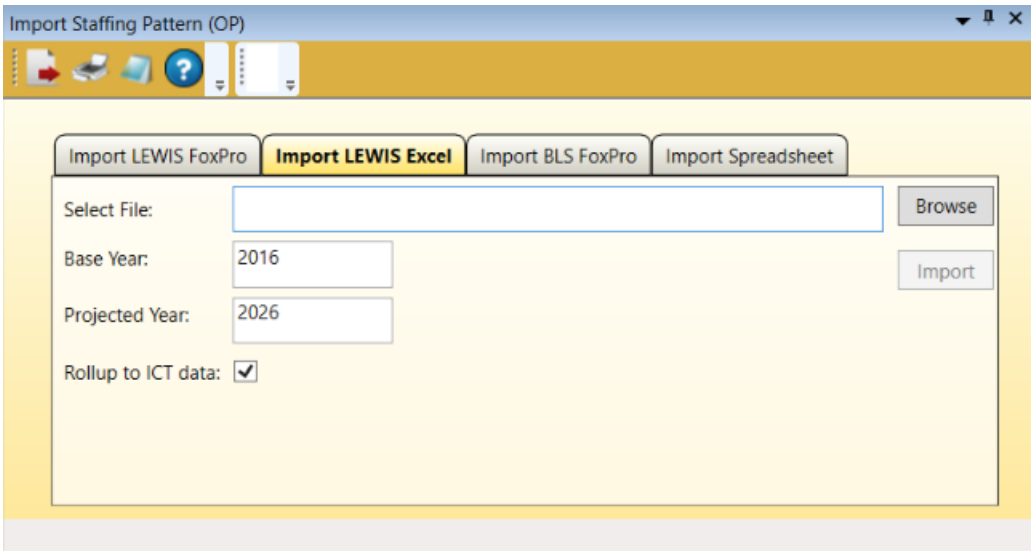


Figure 3: Import LEWIS Excel tab

2. Set a **Base Year** and **Projected Year**.
3. Click **Browse** to find the file containing the needed data.

☞The file must be an Excel file (.xlsx). For additional details on LEWIS Excel file formatting, click here.

4. When the file is found, select it and click **Open**. Validation of the data will occur before it is imported.

5. Select the **Rollup to ICT data** check box to roll up the industry data to match the industries in the ICT file.

6. Click **Import**. The **Import Spreadsheet** dialog displays when the import completes.

7. Click **OK**. The **Import Staffing Pattern** dialog box confirms importation of the data.

Import BLS FoxPro Data

1. Click the **Import BLS FoxPro** tab.

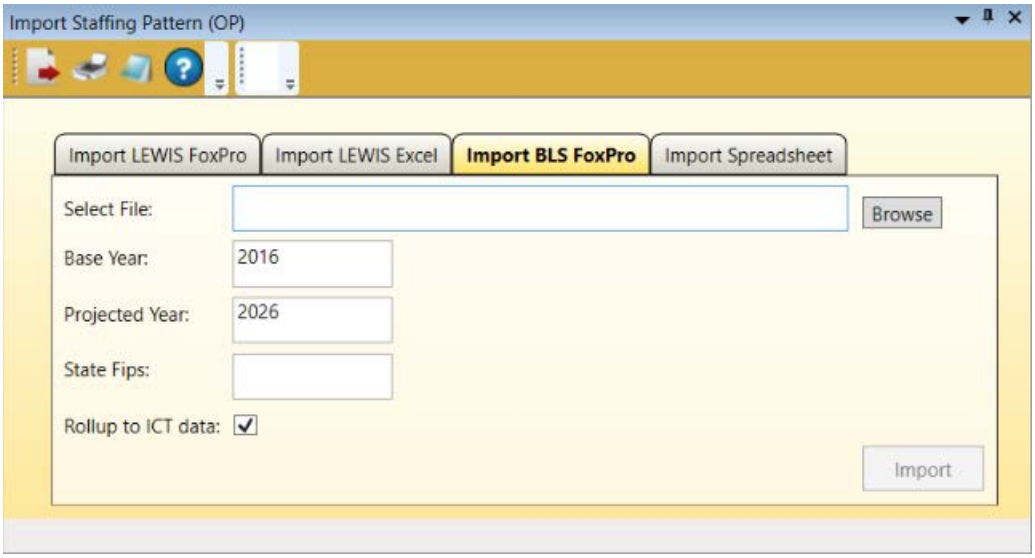


Figure 4: The Import BLS Data tab

2. Set a **Base Year, Projected Year**, and **State Fips** code**.**

3. Click **Browse** to find the file containing the needed data.

☞The file must be a Database file (.db, .dbf, etc.). For more information on the BLS FoxPro file format, click here.

4. When the file is found, select it and click **Open**. Upon validating the data, the **Import Staffing Pattern** screen displays with the file to be imported listed in the **Select file** field.

5. Select the **Rollup to ICT data** check box to roll up the industry data to match the industries in the ICT file.

6. Click **Import**. The **Import Spreadsheet** dialog box will be displayed when the import completes.

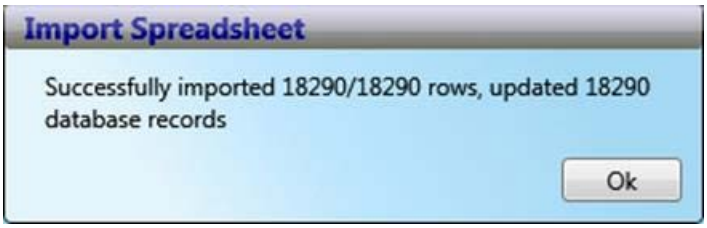


Figure 5: Details of the imported data

7. Click **OK**. The **Import Staffing Pattern** dialog box confirms the data importation.

Import Spreadsheet Data

The Import Spreadsheet tab was included in the Import Staffing Pattern module to allow the importation of data that isn't necessarily created and exported in Projections Suite. Match your values with the Staffing Pattern Spreadsheet format and import your data using this tab.

1. Click the **Import Spreadsheet** tab.

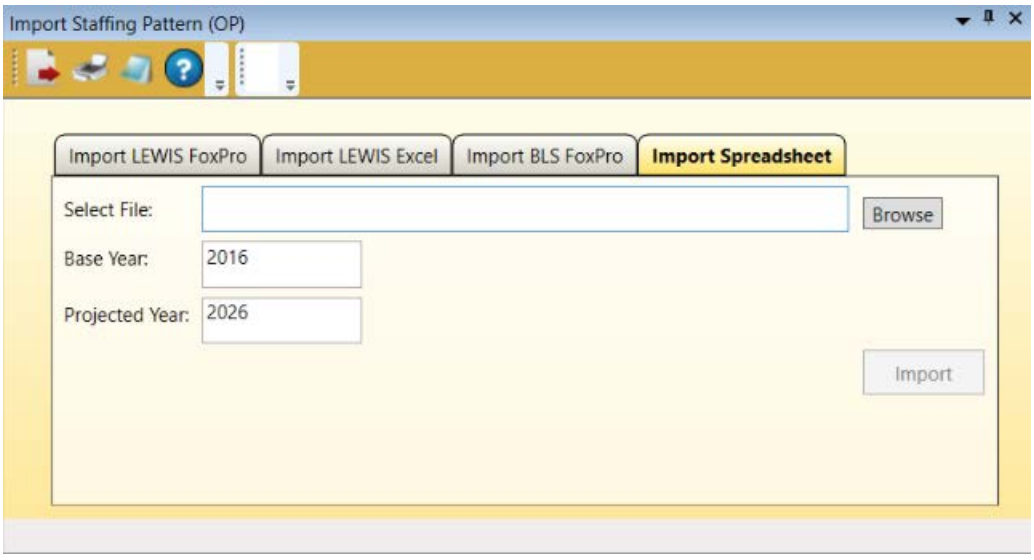


Figure 6: Import Spreadsheet tab

2. Set a **Base Year** and **Projected Year**.
3. Click **Browse** to find the file containing the needed data.
4. When the file is found, select it and click **Open**.

☞The file must be a Spreadsheet file (.xls). For additional information on staffing pattern spreadsheet file formats, click here.

5. Click **Import**. The **Import Spreadsheet** dialog box will indicate when the import completes.

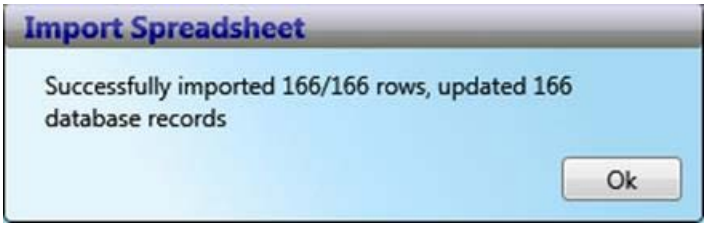


Figure 7: Details of the imported data

6. Click **OK**. The **Import Staffing Pattern** dialog box confirms the importation of the data.

Related Content

- Edit Staffing Pattern
- LEWIS FoxPro/Excel Format
- BLS FoxPro Staffing Pattern Format
- Staffing Pattern Spreadsheet Format
- Industry Directory
- Occupation Directory

Edit ICT

The **Edit ICT** module enables adding, editing, and deleting Industry Control Total (ICT) data. Once you have the ICT data in the system from either importing a file or copying the data over directly from Long Term or Short Term Projections (using the ICT Export module), use the Edit ICT module to display and manipulate the data.

Screen Controls

- **Select Area** drop-down menu
- **Select Timeframe** drop-down menu
- **Right click contextual menu**
  - **Add**
  - **Edit**
  - **Delete**

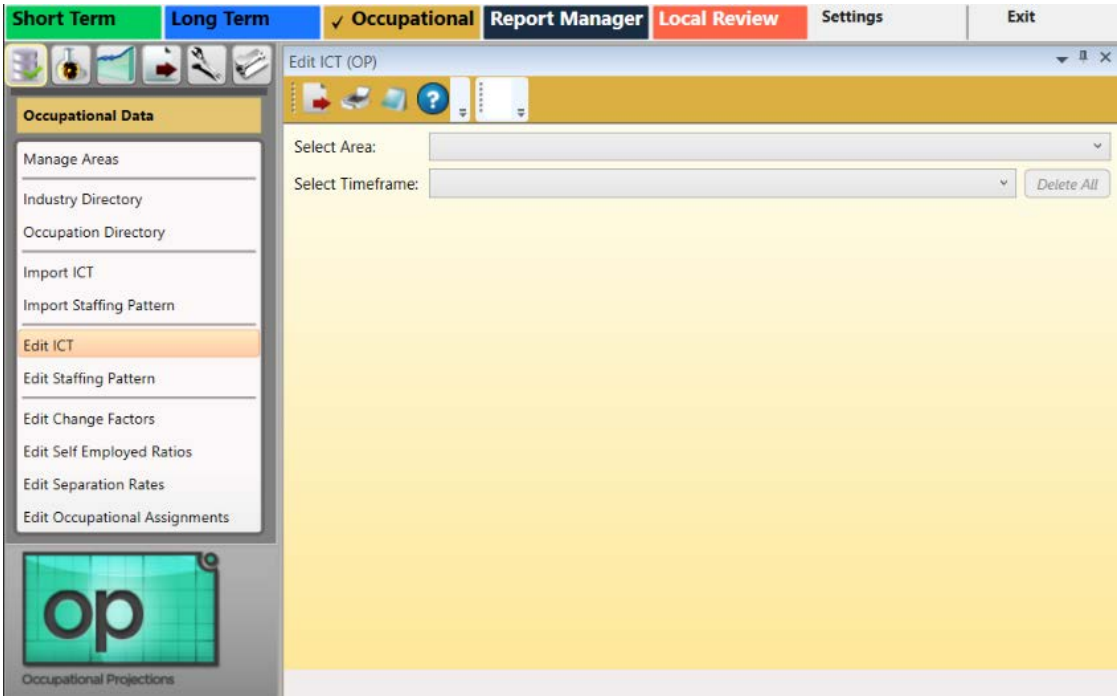


Figure 1: Edit ICT module

View ICT Values

1. Select an area from the **Select Area** drop-down menu.
2. Select a time frame from the **Select Timeframe** drop-down menu. The Edit ICT screen will be displayed with the imported data.

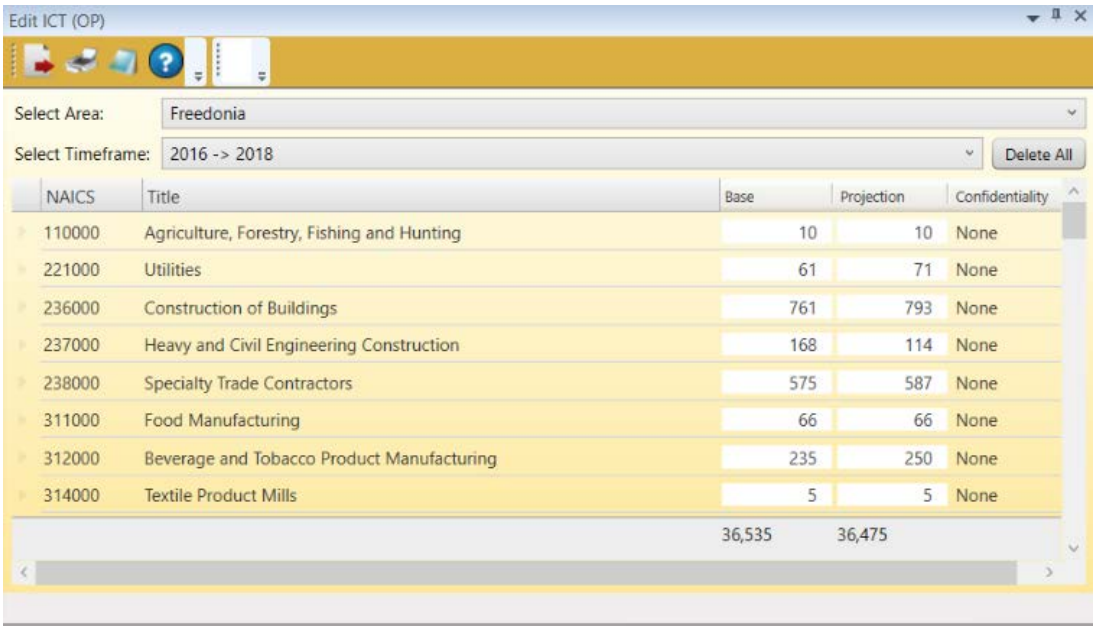


Figure 2: The imported ICT data is displayed

Edit an ICT Record

1. **Right click** the record to be edited.

☞Sort the data (A-Z or 1-100) by clicking on the heading of the column. Clicking the column a second time sorts the data in reverse (Z-A or 100-1).

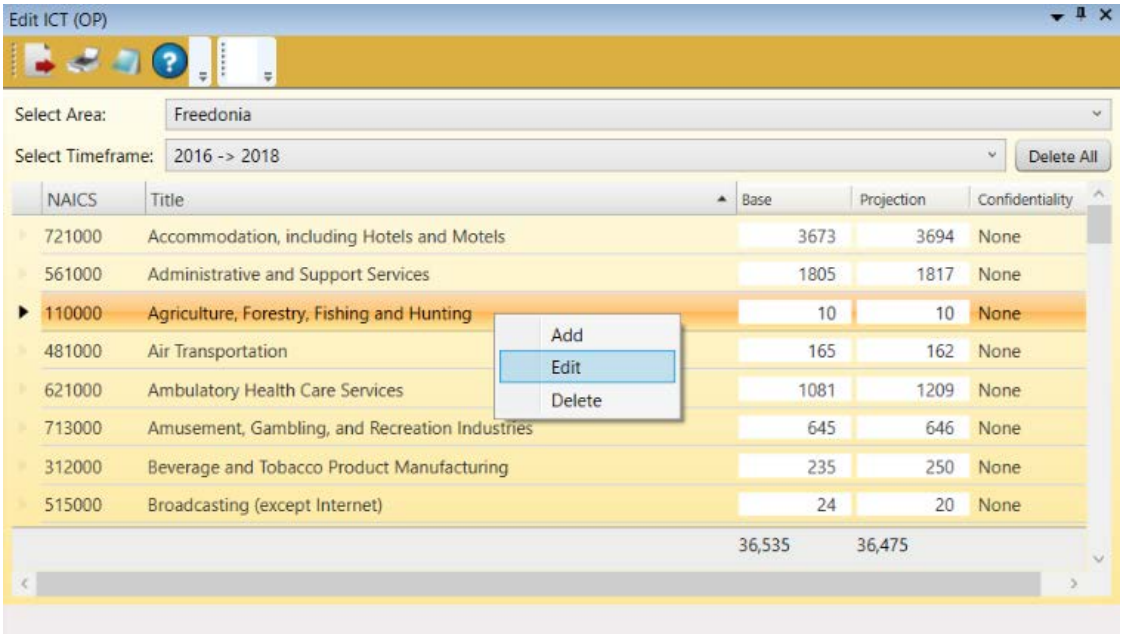


Figure 3: Add, Edit, and Delete context menu

2. Select the **Edit** option and make the desired changes.

Add an ICT Record

1. **Right click** and select **Add** from the contextual menu. The **Create New ICT** dialog box will appear.

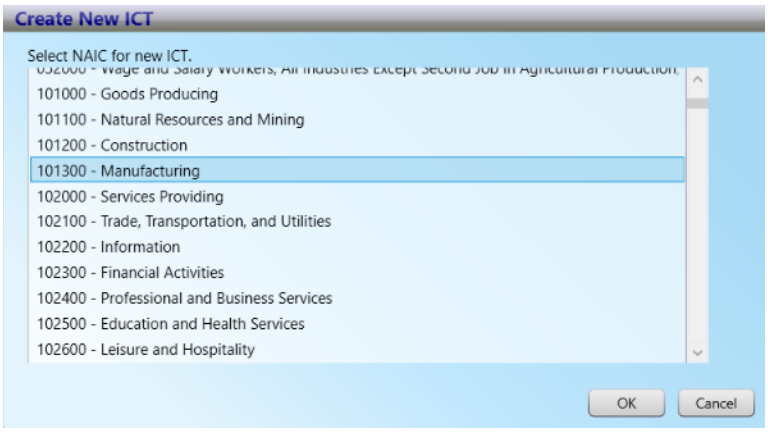


Figure 4: The Create New ICT dialog box

2. Select a NAICS code for the new ICT entry and click **OK**.

Figure 5: The ICT industry Manufacturing is added to the selected area

3. Type the **Base**, **Projection**, and **Confidentiality** values in their fields.

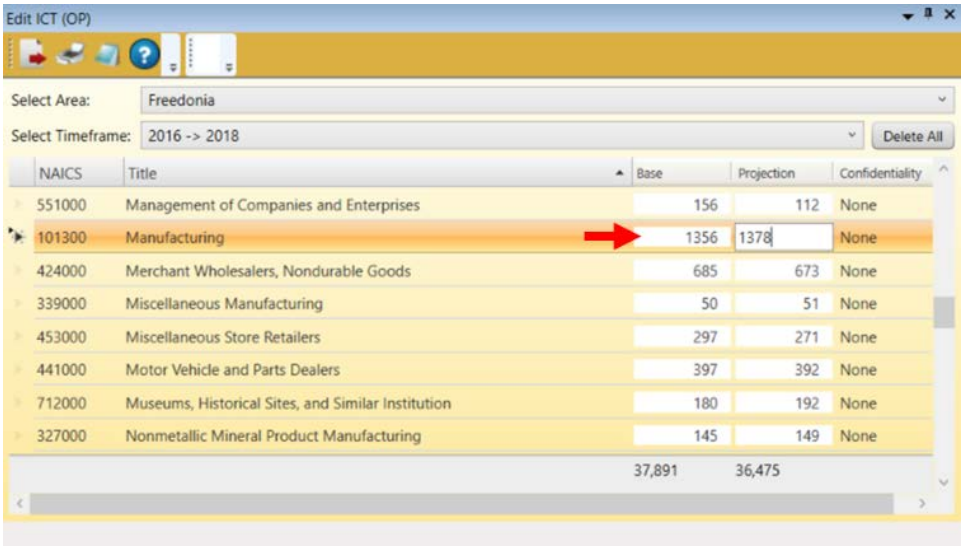


Figure 6: Base, Projection, and Confidentiality values added

4. Press **Enter**, or click on any other record to save the changes.

Edit an ICT Record

1. **Right click** the industry and select the **Edit** option from the contextual menu that displays.
2. Type the new values (or select the desired classification from the Confidentiality drop-down menu) in the field's **Base**, **Projection**, and **Confidentiality** fields.
3. Press **Enter**, or click on any other record to save the changes.

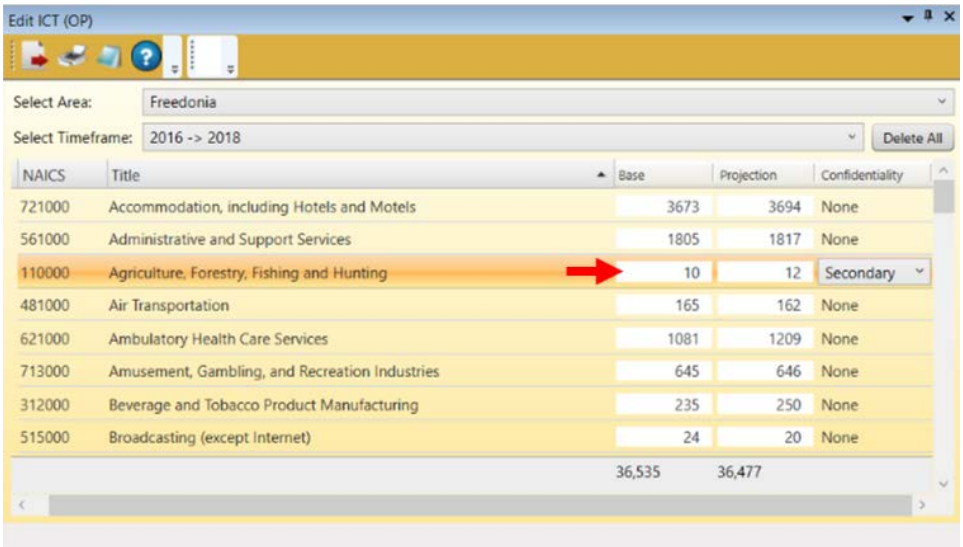


Figure 7: Editing an ICT industry

Delete an ICT Record

1. **Right click** the industry to delete.
2. Select **Delete** from the context menu. The **Delete Record** dialog box will be displayed.
3. Click **Yes** to delete the record. Click **No** to keep the record.

☞Delete multiple records by using the **Shift** and **Ctrl** keys. For more information on selecting multiple items, click here.

Delete All ICT Records for an Area and Time Frame

1. Select an area and time frame from the drop-down menus.
2. Click the **Delete All** button. A **Delete Records** dialog box will be displayed.
3. Click **Yes** to confirm the deletion. Click **No** to keep the records.

Export ICT Records

1. Click the **Export** icon on the Active Module Toolbar. A Save As window will be displayed.
2. Name and select a location for the file.
3. Click the **Save** button.

Related Content

- Import ICT
- ICT Export
- ICT Spreadsheet Format

Edit Staffing Pattern

Once you have staffing pattern data in the system, the **Edit Staffing Pattern** module facilitates staffing pattern maintenance activities. You can add, edit, or delete data.

The **Staffing File Maintenance tab** displays the industries that have staffing patterns and the occupational employment totals for each industry. The **Staffing Pattern Maintenance tab** displays all the occupations that comprise an industry staffing pattern.

Screen Controls

- **Select an Area** drop-down menu
- **Select a Timeframe** drop-down menu
- **Select an Industry** drop-down menu
- **Staffing File Maintenance** tab
- **Staffing Pattern Maintenance** tab
- **Delete All Industries** button

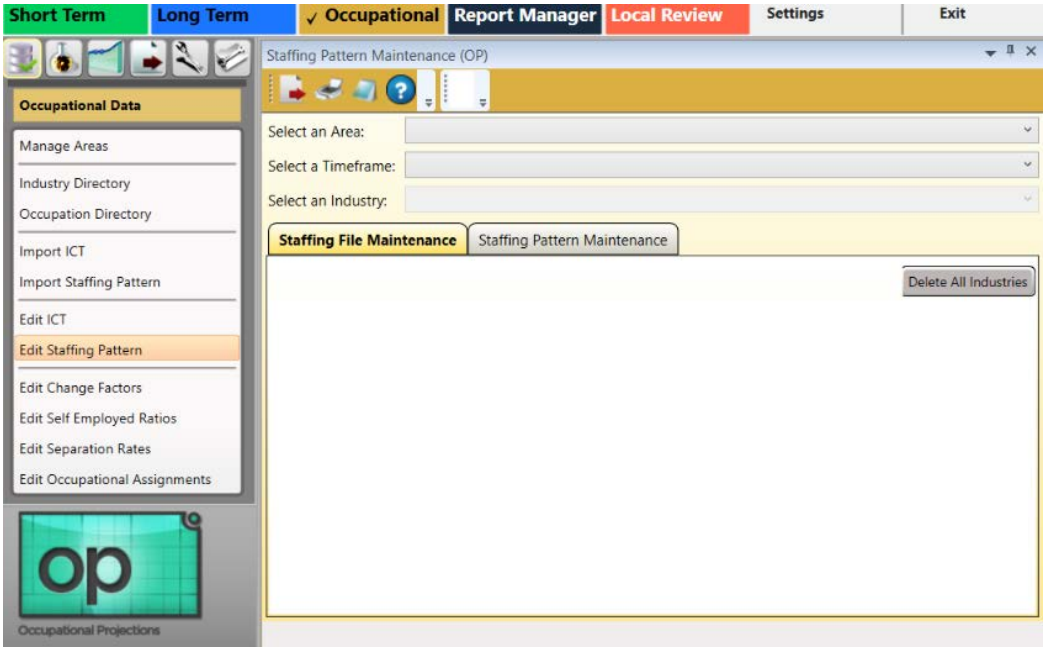


Figure 1: Edit Staffing Pattern module

View Staffing Patterns

1. **Select an Area** from the drop-down menu.

2. **Select a Timeframe** from the drop-down menu. The data from the selected Area and time frame will be displayed. The **Staffing File Maintenance** tab allows deleting of industries within the selected area and time frame.

☞The Pattern Total column is calculated by summing up all of the occupations that make up that industry.

Delete an Industry

1. **Right click** the unnecessary industry. A **Delete** menu item will display.

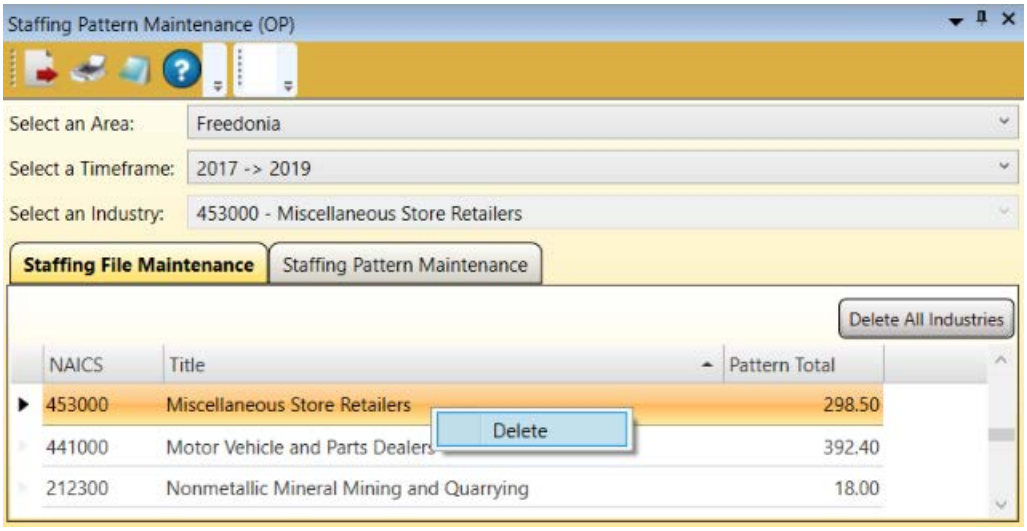


Figure 2: Deleting an industry from the Staffing File Maintenance tab

2. Click **Delete**. The **Delete Record** dialog box will be displayed.

3. Click **Yes** to delete the record from the selected area and time frame. Click **No** to keep the industry record.

☞Delete multiple records by using the **Shift** and **Ctrl** keys. For more information on selecting multiple items, click here.

Delete All Industries for a Selected Area and Time Frame

1. From the **Staffing File Maintenance** tab, click the **Delete All Industries** button. A confirmation dialog will be displayed.

2. Select **Yes** to delete the staffing patterns. Click **No** to keep the staffing patterns.

Staffing Pattern Maintenance

1. Select the **Staffing Pattern Maintenance** tab. The **Staffing Pattern Maintenance** screen will be displayed and the **Select an Industry** drop-down menu will unlock.

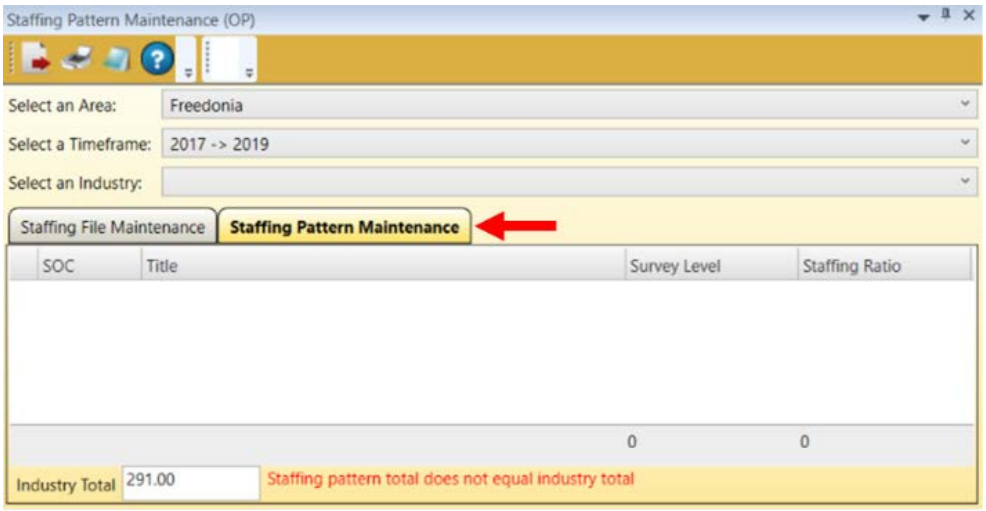


Figure 3: Staffing Pattern Maintenance tab

2. **Select an Industry** from the drop-down menu. Selecting an Industry will display the **SOC**, **Title**, **Survey Level**, and **Staffing Ratio** for each associated profession within the industry:

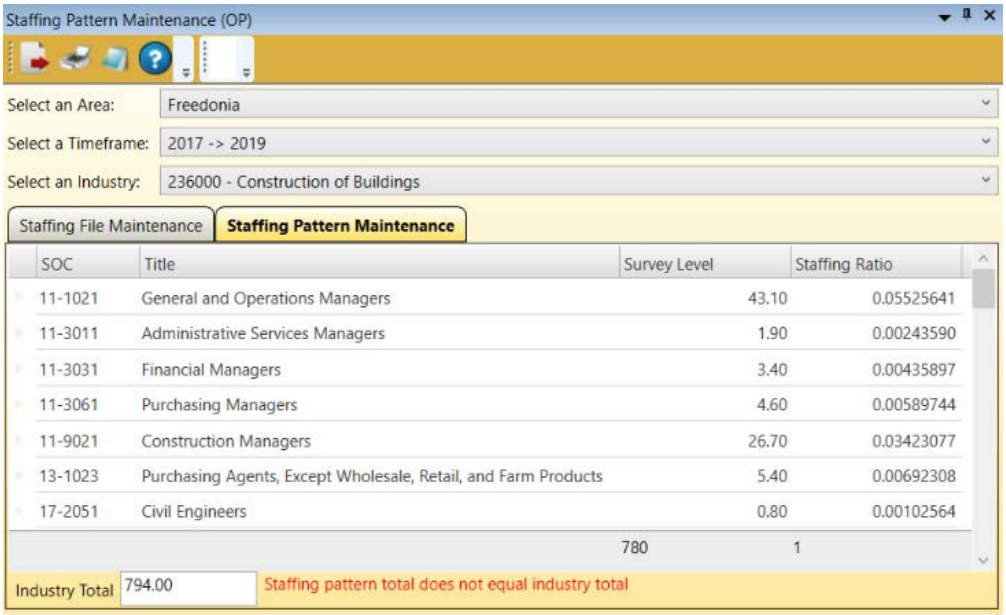


Figure 4: Associated staffing pattern data for the selected industry

3. **Right click** to display a contextual menu to **Add**, **Edit**, or **Delete** staffing pattern data. The Staffing Ratio (the percentage of employment that each occupation comprises from the total industry employment) is what is used in the calculation. Whenever you add, edit, or delete a staffing pattern, make sure the ratio seems reasonable.

☞The Survey Level is the employment value this occupation has in this industry.

Export Staffing Pattern

1. Click the Export icon in the Active Module Toolbar. A Save As window will be displayed.
2. Name and select a location for the file.
3. Click the **Save** button.

Related Content

- Import Staffing Pattern

Edit Change Factors

The **Edit Change Factors** section of Projections Suite enables the display of the national change factor data in the system. **Edit Change Factors** facilitates adding, editing, and deleting of the change factor for specific occupations.

Change Factors can be explained through the definition of a few key terms. Staffing patterns are a distribution of employment within an industry (or rather, a set of ratios). Ratio analysis is the process of projecting changes in staffing pattern within industries. A **Change Factor** is the projected change in staffing pattern ratios, which is always accompanied by a rationale or reasons for the underlying Change Factor. Analysts use occupational expertise and empirical evidence to make decisions about how occupational utilization may change over the projections period.

A Change Factor equal to 1 indicates no change in the proportion of the occupation within the industry. A factor less than 1 indicates a declining proportion of the occupation within the industry. A factor greater than 1 indicates an increasing proportion of the occupation within an industry.

Change Factor Magnitude	Description
0.50	Very large decrease
0.65	Large decrease
0.80	Moderate decrease
0.90	Small decrease
1.00	No change
1.10	Small increase
1.20	Moderate increase
1.35	Large increase
1.50	Very large increase

Screen Controls

- **Select an Area** drop-down menu

- **Select an Industry** drop-down menu
- **Right click contextual menu**
  - **Add**
  - **Edit**
  - **Delete**

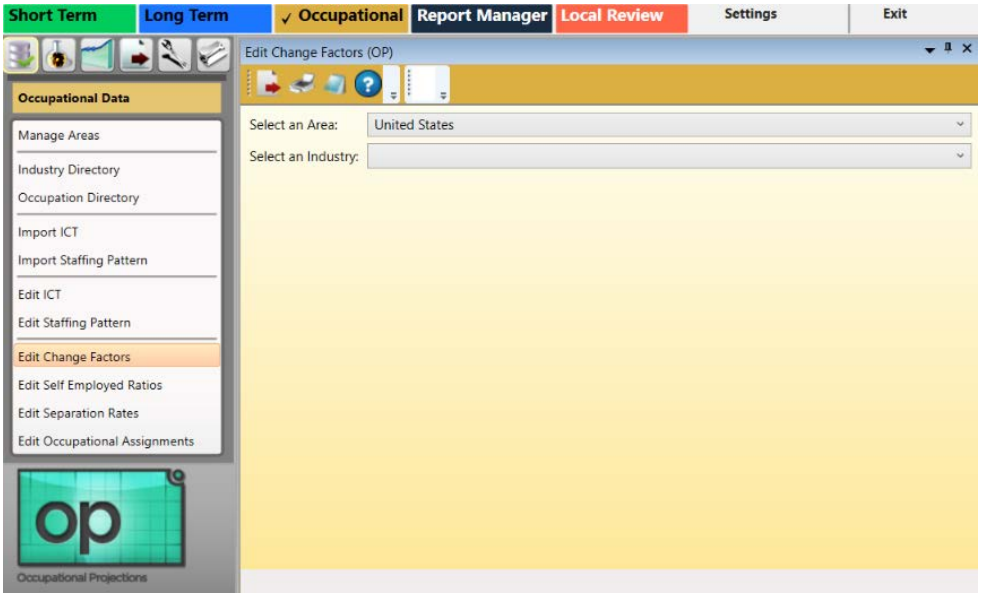


Figure 1: Edit Change Factors module

View Change Factors

1. **Select an Area**.
2. **Select an Industry**. The occupations contained within the selected industry are displayed.

Figure 2: Titles and Change Factors within the Industry

Add a New Occupation Title and Change Factor

1. **Right click** on any occupation.

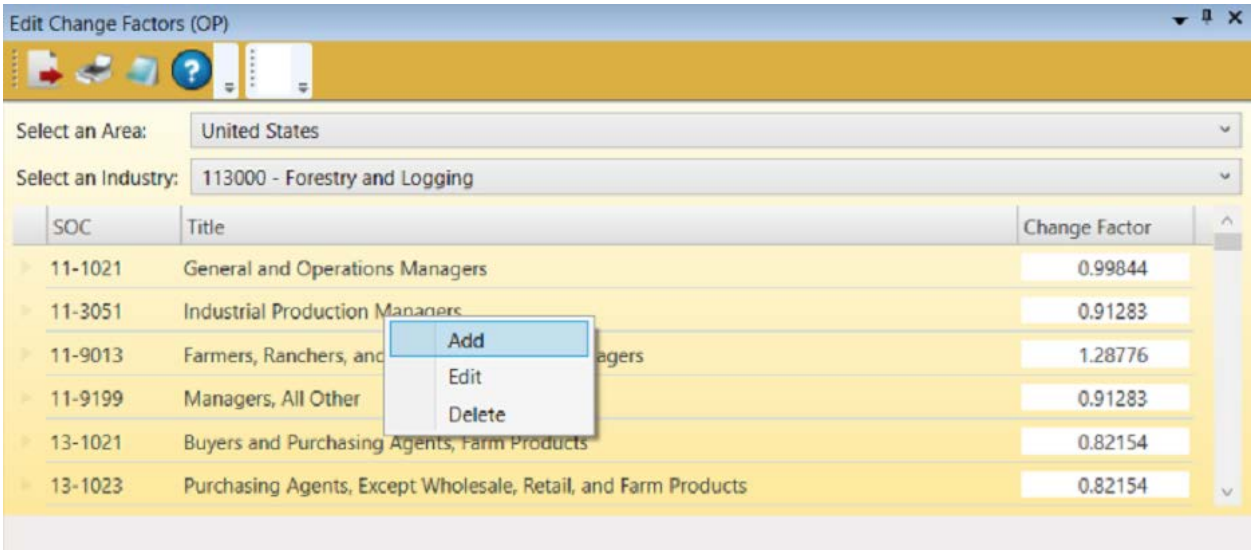


Figure 3: Adding a new Title

2. Click the **Add** option. The **Create New Change Factor** dialog box will be displayed:

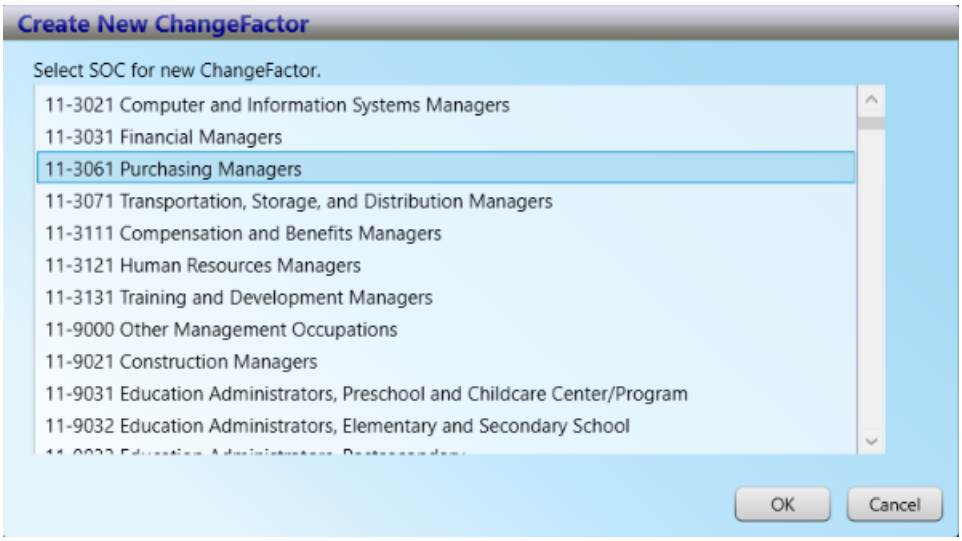


Figure 4: Create New Change Factor dialog box

3. Select the SOC to be added. Click **OK**.

Figure 5: Adding a new occupation and its Change Factor

4. Type the **Change Factor** for the new occupation.
5. Press **Enter**, or click any other title to accept the value.

Edit an Occupation's Change Factor

1. **Right click** the occupation to modify its Change Factor.
2. Click **Edit**. The Change Factor field can now be modified.
3. Enter the new Change Factor value.

Figure 6: Modifications can be made to the Change Factor

4. Press **Enter**, or click any other occupation to accept the change.

Delete an Occupation

1. **Right click** the occupation to be deleted.
2. Select **Delete** from the contextual menu. A Delete Record confirmation dialog box will be displayed.
3. Click **Yes** to delete the record. Click **No** to keep the record.

Export Change Factors

1. **Select an Area** and **Select an Industry** from the drop-down menus to select the industry information you want to export.
2. Click the **Export** icon in the Active Module Toolbar. A Save As window will be displayed.
3. Name and select a location for the file.
4. Click **Save**.

Related Content

- Calculate Projections

Edit Self Employed Ratios

The **Edit Self Employed Ratios** module allows the changing of SE (Self Employed) ratios.

For additional information on the self employed calculations, visit this link.

Screen Controls

- **Select Area** drop-down menu
- **Right Click** Menu
  - **Add**
  - **Edit**
  - **Delete**

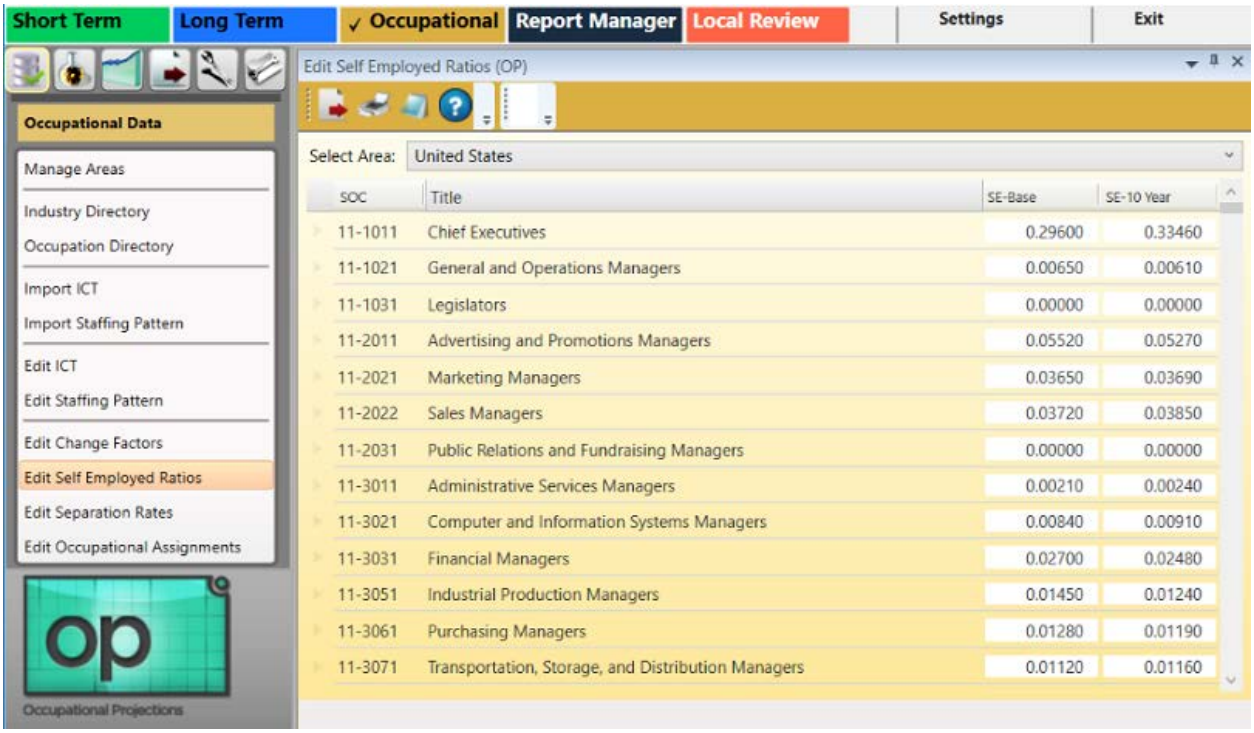


Figure 1: Edit Self Employed Ratios module

Add a New Record

1. Select an area from the **Select Area** drop-down box.
2. **Right click** on any record. A contextual menu will be displayed.

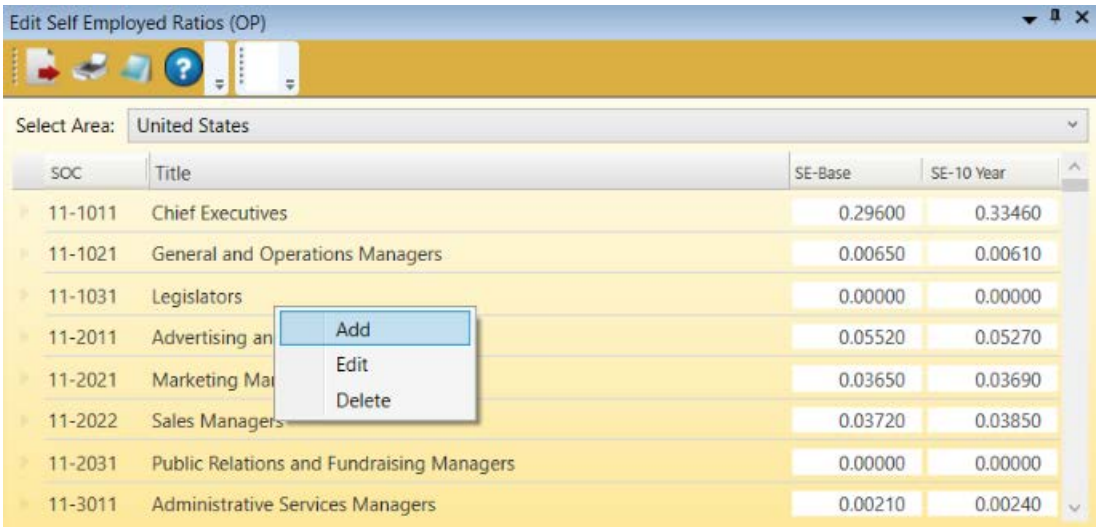


Figure 2: Click add from the contextual menu

3. Click the **Add** option. The **Create New Self Employment Ratio** dialog box will be displayed.

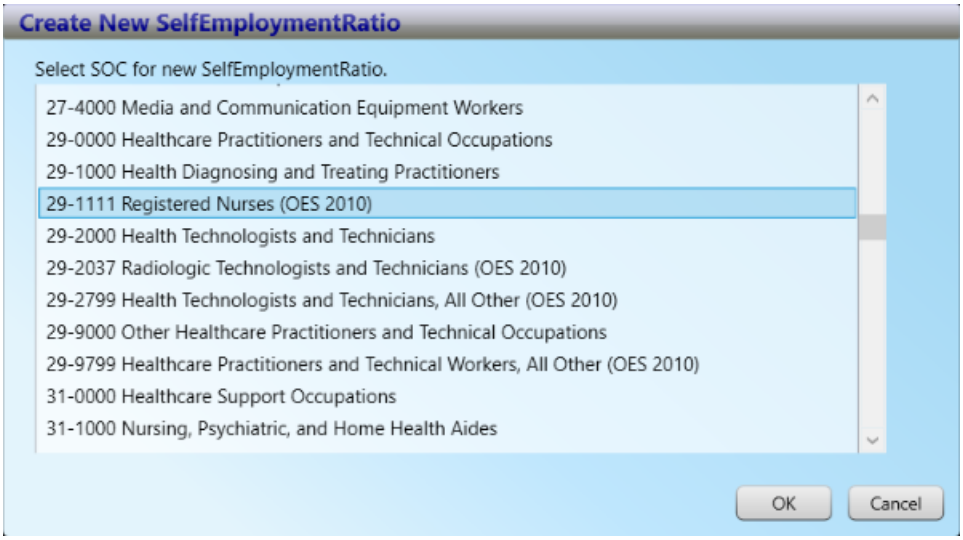


Figure 3: Create New Self Employment Ratio dialog box

4. Select the desired **Standard Occupational Classification (SOC)** code and click **OK**. The new record will be displayed in its numerical order, in the Title listing.

5. Enter the values for the **SE - Base** and **SE - 10 Year** for the new record.

Figure 4: The Registered Nurses record is displayed

6. Press **Enter**, or click on any other record to save the new record.

Edit a Record

1. **Right click** a record to select it for editing.
2. Select the **Edit** option.

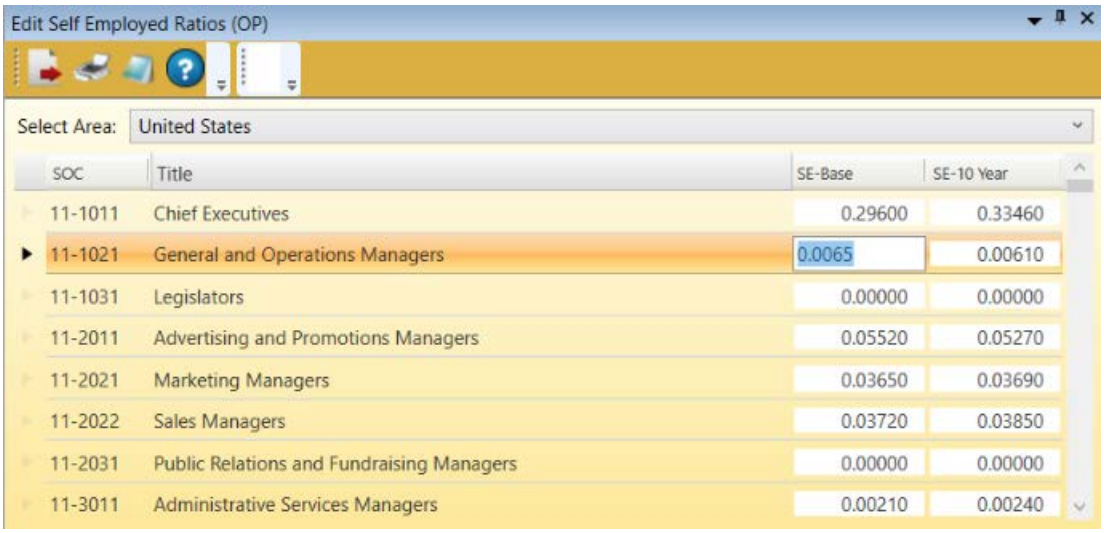


Figure 5: Edit a Self Employed Ratio record

3. Type the new values for the **SE - Base** and **SE - 10 Year**.
4. Press **Enter**, or click on any other record to save the changes.

Delete a Record

1. **Right click** on the record to delete.
2. Select **Delete**. A confirmation dialog box will be displayed.
3. Click **Yes** to delete the record. Click **No** to keep the record.

Related Content

- Calculate Self Employed (Statistical and Technical Terms)

Edit Separation Rates

The **Edit Separation Rates** module was updated from the Replacement Rates methodology in 2017 to reflect differences between workers changing careers and retiring. Separation Rates uses two sets of calculations to determine Occupational Transfers (migrations to new careers) and Labor Force Exits (traditional retirements). The new methodology is more dynamic in capturing the nuances of the "gig economy" and provides more precise projections.

Additional information from BLS on the New Occupational Separations Methodology can be found by clicking here. Separations Communications from Projections Central can be found here.

For additional information on the process used to calculate occupational separations, visit this link.

The **Edit Separation Rates** menu allows editing of existing records and adding of new records.

Screen Controls

- **Select Area** drop-down menu
- **Right Click** context menu
  - **Add**
  - **Edit**
  - **Delete**

Figure 1: Edit Separation Rates module

Add a New Record

1. Select an area from the **Select Area** drop-down box.
2. **Right click** on any record. A contextual menu will appear.
3. Click **Add**. The **Create New Separation Rate** dialog box will be displayed.

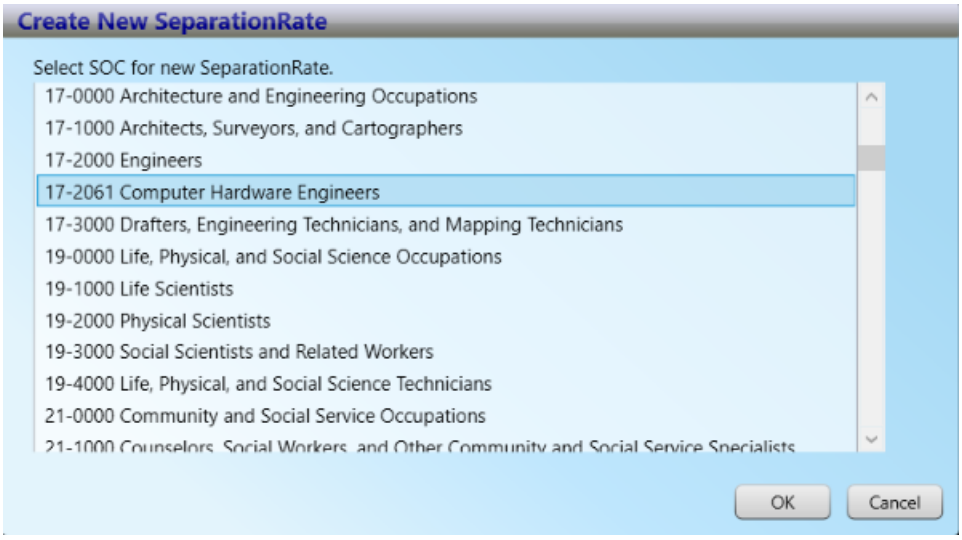


Figure 2: Add occupation

4. Select the SOC to add to the Separation Rates data and click **OK**.
5. Enter the **Transfer** and **Exit Rates** for the new record.

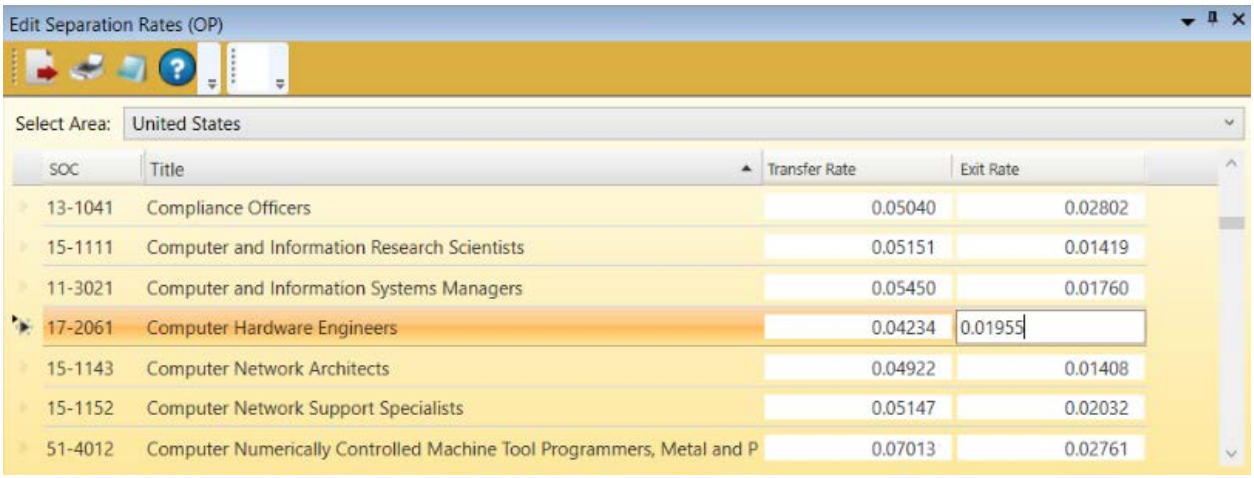


Figure 3: Entering the Transfer Rate and Exit Rate

6. Press **Enter**, or use the **Tab** key to save the values for the new record.

Edit Separation Rate Values

1. Select an area using the **Select Area** drop-down box.
2. **Right click** a record and select **Edit**.

☞To sort the information in the module, **click the Title column** to sort the titles.

3. Edit the **Transfer Rate** and **Exit Rate** fields.

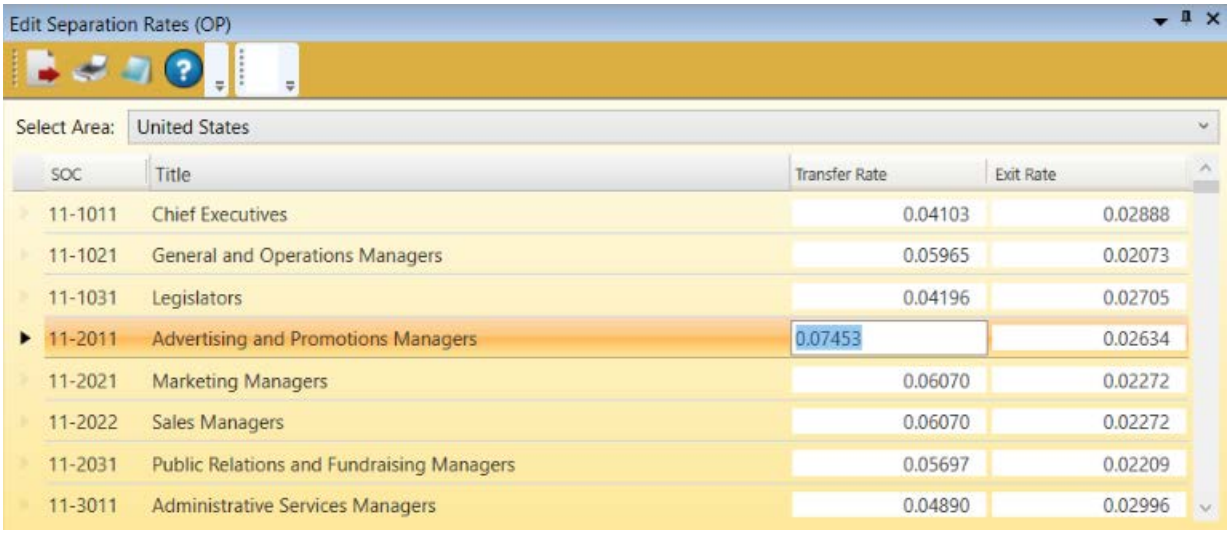


Figure 4: Editing the Transfer and Exit Rate fields

Delete a Record

1. Select an area from the **Select Area** drop-down menu.
2. **Right click** the desired record and select **Delete** from the context menu. The **Delete Record** confirmation dialog box will be displayed.
3. Click **Yes** to delete the record. Click **No** to keep the record.

Related Content

- Openings
- Occupational Separations (Statistical and Technical Terms)

Edit Occupational Assignments

The **Edit Occupational Assignments** module indicates the education, work experience, and job training requirements for specific occupations. It also allows the adding and editing of occupational positions and records by SOC (Standard Occupational Classification).

Screen Controls

- **Select Area** drop-down menu
- **Right Click** context menu
  - **Add**
  - **Edit**
  - **Delete**

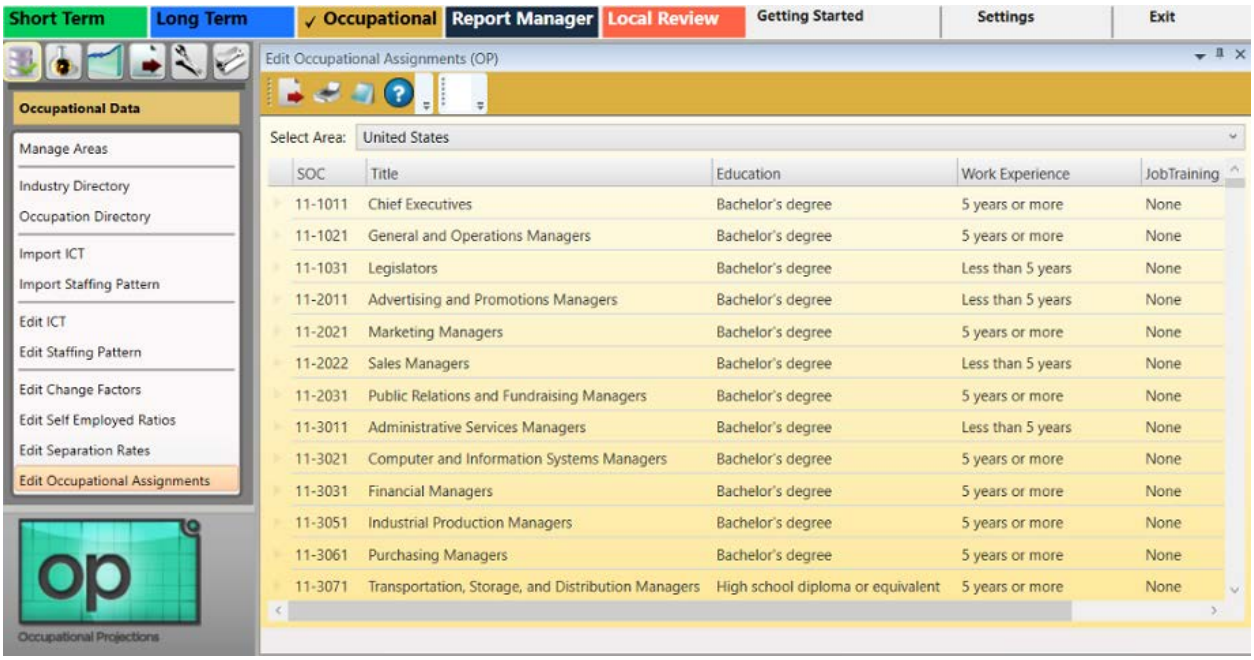


Figure 1: Edit Occupational Assignments module

Add Occupational Assignment

1. Select an area from the **Select Area** drop-down menu.
2. **Right click** on any record and select the **Add** option. The **Create New Occupational Assignment** dialog box will be displayed.

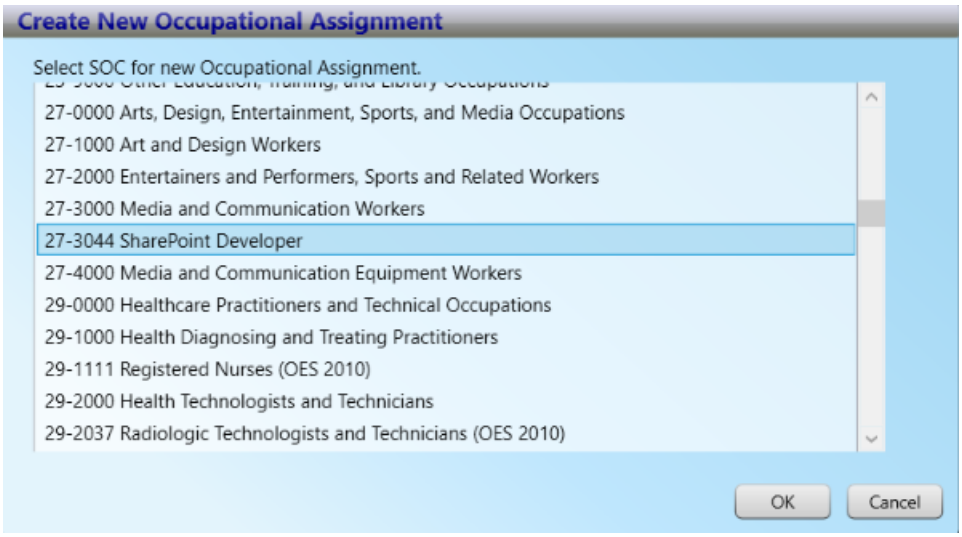


Figure 2: Create New Occupational Assignment dialog box

3. Select the SOC code to add and click **OK**. This will return you to the **Edit Occupational Assignments** window.

4. Click the **Education** category drop-down menu and select the desired **Education** category.

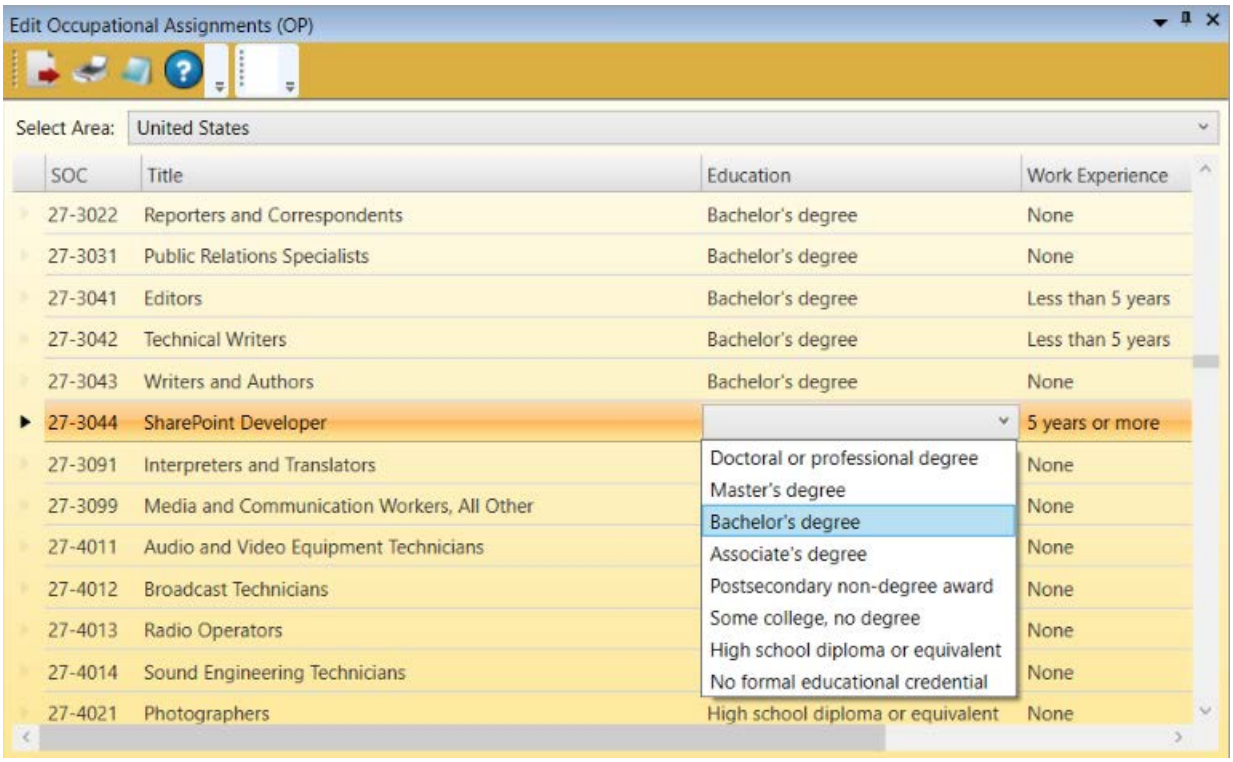


Figure 3: The occupation is added and assigned an Education category

5. Select an appropriate **Education** level and **Job Training** requirements.

Edit an Occupational Assignment

1. **Right click** on the record and select **Edit** from the context menu. The **Education** category drop-down menu will be activated.
2. Select a new level of **Education** to replace the old one.
3. Click or Tab into the **Work Experience** column to edit it.
4. Click or Tab into the **Job Training** column to edit its value.
5. Press **Enter** or click another occupation to save the changes to the record.

Delete an Occupational Assignment

1. **Right click** the record and select **Delete** from the context menu. A **Delete Record** confirmation dialog box will be displayed.
2. Click **Yes** to delete the record. Click **No** to keep the record.

Related Content

- Occupation Directory

Occupational Analysis Menu Items

Occupational Analysis Introduction

The **Occupational Analysis** section of Projections Suite enables matching, copying, rollup, and quality checking of occupational data. Use these analysis tools to review data or to create/edit data in preparation for processing projections.

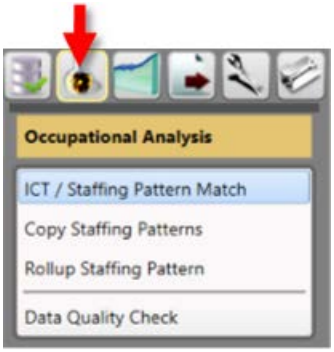


Figure 1: Occupational Projections Analysis group menu

The Occupational Analysis group menu contains the following selections:

- ICT / Staffing Pattern Match
- Copy Staffing Patterns
- Rollup Staffing Patterns
- Data Quality Check

ICT/Staffing Pattern Match

The **ICT/Staffing Pattern Match** module compares the industries in the ICT data with those in the staffing pattern data. The purpose of this module is to identify holes in the data before calculating Occupational Projections.

Missing data can be handled using the Copy Staffing Patterns, Rollup Staffing Pattern, Edit ICT, or Edit Staffing Pattern modules.

Screen Controls

- **Select an Area** drop-down menu
- **Select a Timeframe** drop-down menu
- **Filter** drop-down menu

Figure 1: ICT/Staffing Pattern Match module

View the ICT/Staffing Pattern Matches

1. **Select an Area** from the drop-down menu.
2. **Select a Timeframe**.
3. Select a **Filter** (if any) from the **Filter** drop-down menu. The **ICT/Staffing Pattern Match** data will be displayed.

☞Selecting a filter is optional. You can select **None** (the default) or **No Matches Only**.

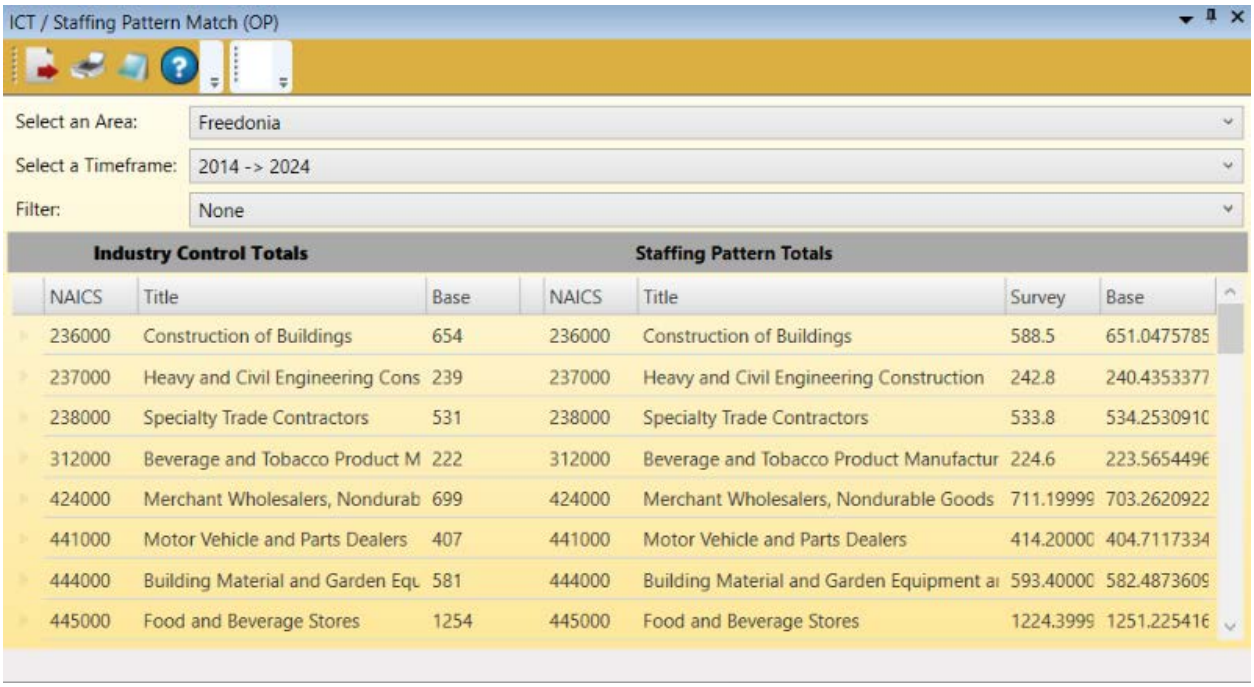


Figure 2: Data matching the selected criteria is displayed

☞Make sure the correct geographic area and time frame were selected. **If staffing patterns were not imported yet, the right half of the screen will be blank. If the ICT data has not been imported, the left half of the screen will be blank.**

☞When you first import the OES staffing patterns, there will be non-matches because the OES does not survey all industries. The following industries in the ICT file will not have staffing patterns:

3-digit	**4-digit**
111	1131
112	1132
113	1141
114	1142
115	1153
482	4821
814	8141

To correct these non-matches, staffing patterns must be added to the OES staffing patterns. The best source is National staffing patterns. Review the National staffing patterns.

Related Content

- Import ICT
- Import Staffing Pattern
- Edit ICT
- Edit Staffing Pattern
- Rollup Staffing Pattern

Copy Staffing Patterns

There may be areas that have staffing patterns which need to be copied to an area, so that data can be worked with without time-intensive manual replication. **Copy Staffing Patterns** facilitates the copying of these patterns from one area to another, or for the same area but within a different time frame.

Select the source you want to copy the data from, then select the target state and Area definition for that state where you want to copy it to. You cannot copy over any industry you already have data for. To replace it, delete the data that already exists using the Edit Staffing Pattern module first. Once it's deleted, you can copy the staffing pattern. No data is actually copied until you click **Save Staffing Patterns**.

The same staffing pattern file can be used for your Long and Short Term Projections. You can import the file twice, entering the respective time frame values. Or, import the file only once and use the Copy Staffing Pattern module to copy it to the same area, within a different time frame.

Screen Controls

- **(Source) Area** drop-down menu
- **(Source) Timeframe** drop-down menu
- **(Target) State** drop-down menu
- **(Target) Area** drop-down menu
- **Base Year** field
- **Projected Year** field
- **Save Staffing Patterns** button
- **Move right** and **Move left** buttons
- **Move all right** and **Move all left** buttons

Figure 1: Copy Staffing Patterns module

Copy Staffing Patterns:

1. Click the area to copy from, from the **(Source) Area** drop-down menu.

☞The **source** is the data you want to **copy from**. The **Target** is where you want to **copy to**.

2. Select the **Timeframe** from the drop-down menu. Industries with staffing patterns for the selected **(Source) Area** and **Timeframe** will automatically populate.
3. Select the **State** to copy to, from the **State (Target)** drop-down menu.
4. Select the **Area** to copy to, from the **(Target) Area** drop-down menu.
5. Enter a value in the **Base Year** field.
6. Enter a value in the **Projected Year** field.

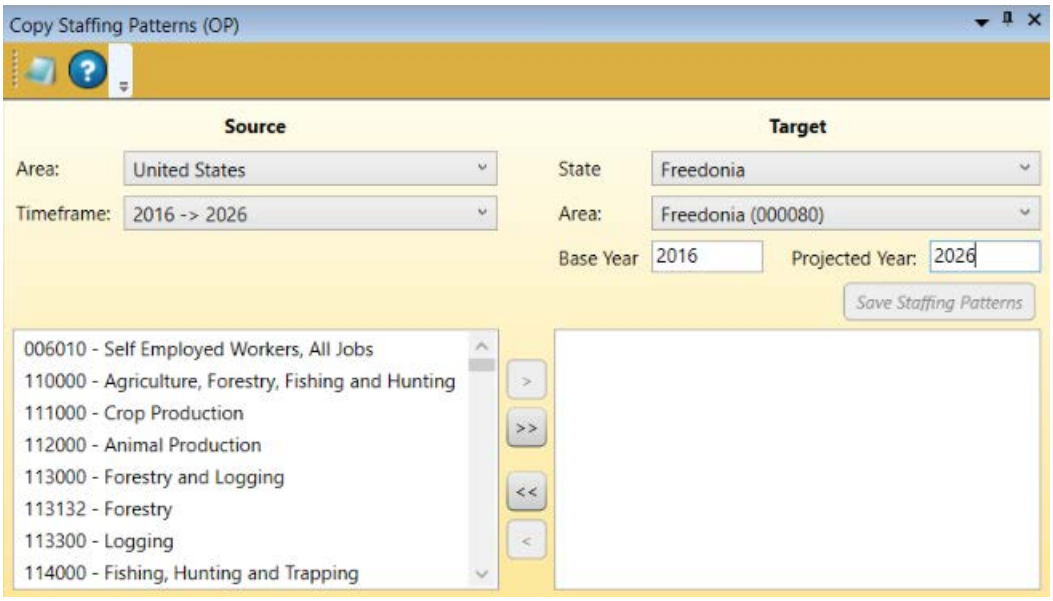


Figure 2: Data entered into the (Source) Area, Timeframe, (Target) State, (Target) Area, Base Year, and Projected Year fields

7. **Tab** out of the **Projected Year** field. The Target industries will populate if there are any in the database.

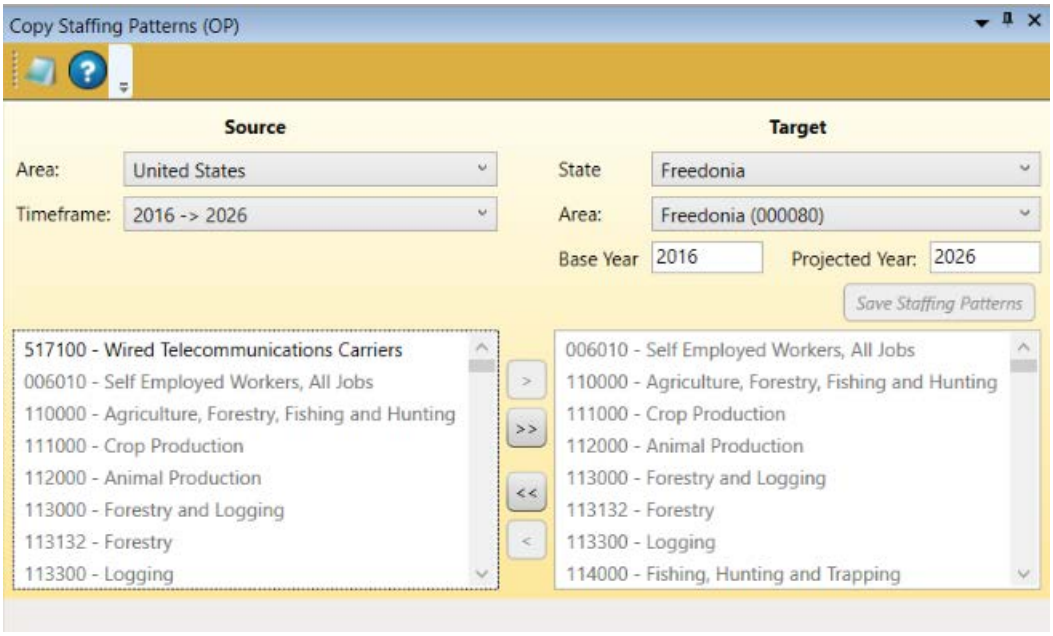


Figure 3: Staffing patterns for the selected (Target) Area will automatically populate

The industry list in the Source Area has both active (dark font) and non-active (grayed font) industries. The active industries are not listed in the Target Area

list. If either Area has a matching staffing pattern, both are non-active (grayed-out), and it will not be possible to copy the pattern for that industry from the Source Area to the Target Area.

8. Click an industry in the **Source** list with the desired staffing pattern to copy to the **Target** list.

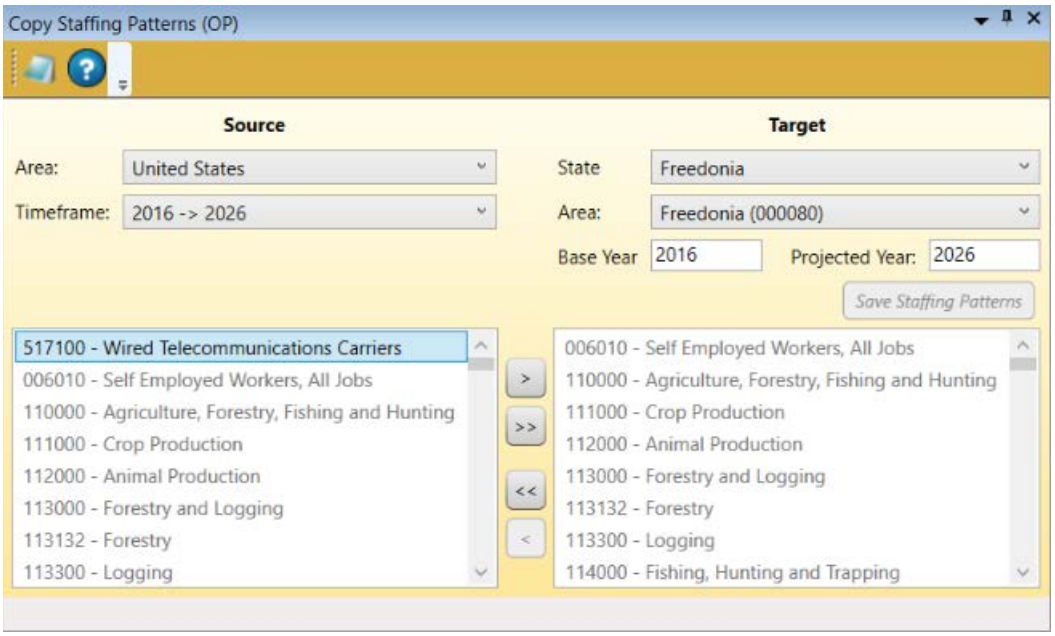


Figure 4: Click an industry in the Source Area to copy it to the Target Area

9. Click the **Move** > button (the example in Figure 5 uses the move button). Alternatively, click the **Move All** >> button to move all available industries to the **Target** list.

☞In the **Source Area**, upon right-clicking, the menu options **Add Selected**, **Select All**, and **Unselect All** become available. The **Remove Selected**, **Select All**, and **Unselect All** options become available in the **Target Area**, by right-clicking.

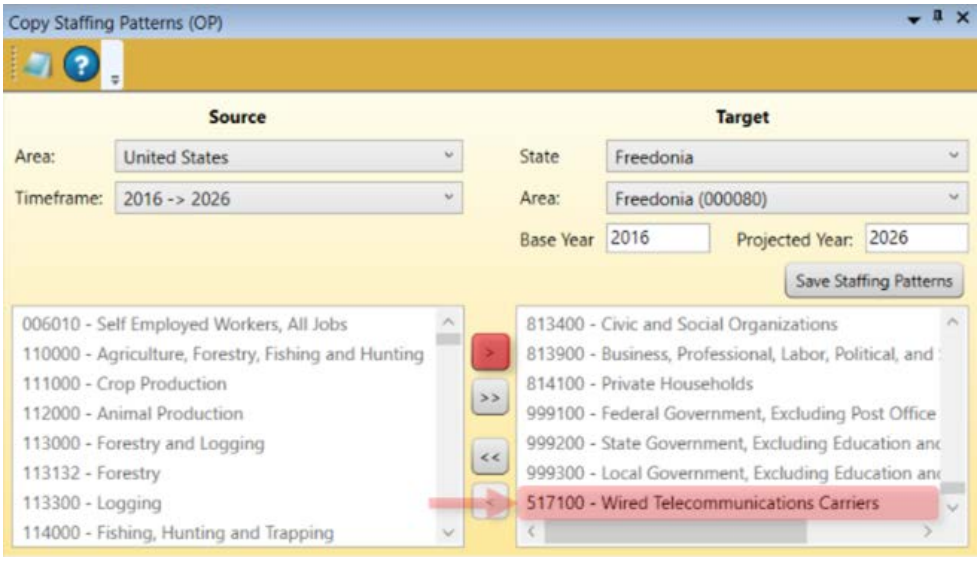


Figure 5: The 517100 industry is moved from the Source list to the Target list

Clicking the **Move** button copies industry 517100 to the Area of Freedonia (000080) for the 2016 to 2026 time frame.

☞Notice the copied industry is at the bottom of the area. Later, it will be automatically sorted into alphabetical order.

10. Click **Save Staffing Patterns** to save the staffing pattern(s) to the new area and time frame. The staffing patterns will be saved to the Target area:

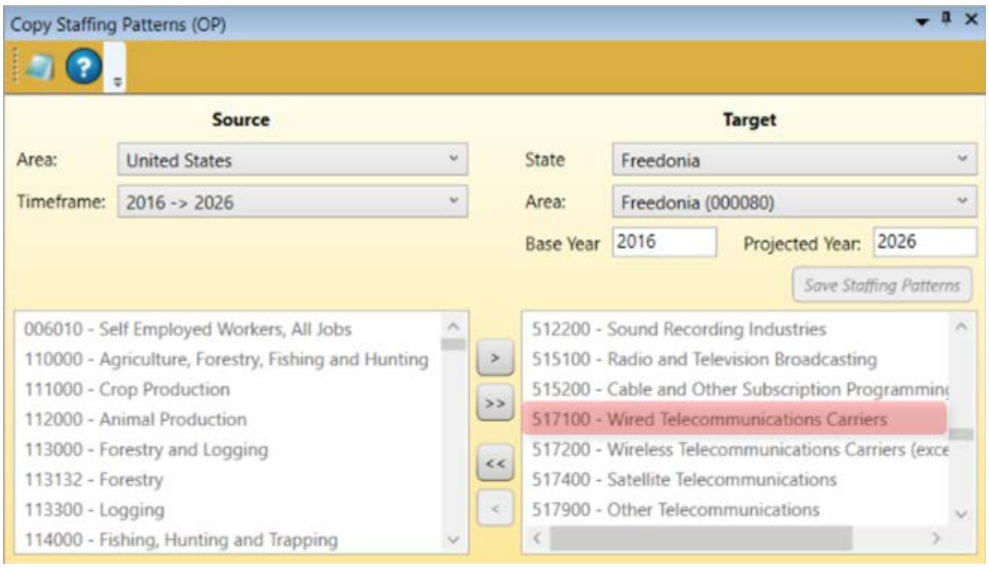


Figure 6: The industry's staffing pattern has been copied and sorted into the Target area

Related Content

- Import Staffing Pattern
- Edit Staffing Pattern

Rollup Staffing Pattern

Use the **Rollup Staffing Pattern** module to combine multiple staffing patterns into an ICT industry or to re-code, or re-name, a single staffing pattern to match the ICT data.

The rollup will only let you select an industry for which there isn't already a match. If you already have the ICT data and the staffing pattern data for an industry, the industry will not be displayed in the list; only non-matches are displayed. One possible use of the rollup is changing the staffing pattern's industry code to match the ICT data. Another use is combining multiple staffing patterns into a single staffing pattern to match the ICT data. You can select multiple staffing pattern industries, but only a single ICT industry.

Screen Controls

- **Patterns to Rollup** tab
  - **Area** drop-down menu
  - **Timeframe** drop-down menu
- **Industry Rollup Code** tab
- **Process** tab
  - **Rollup** button

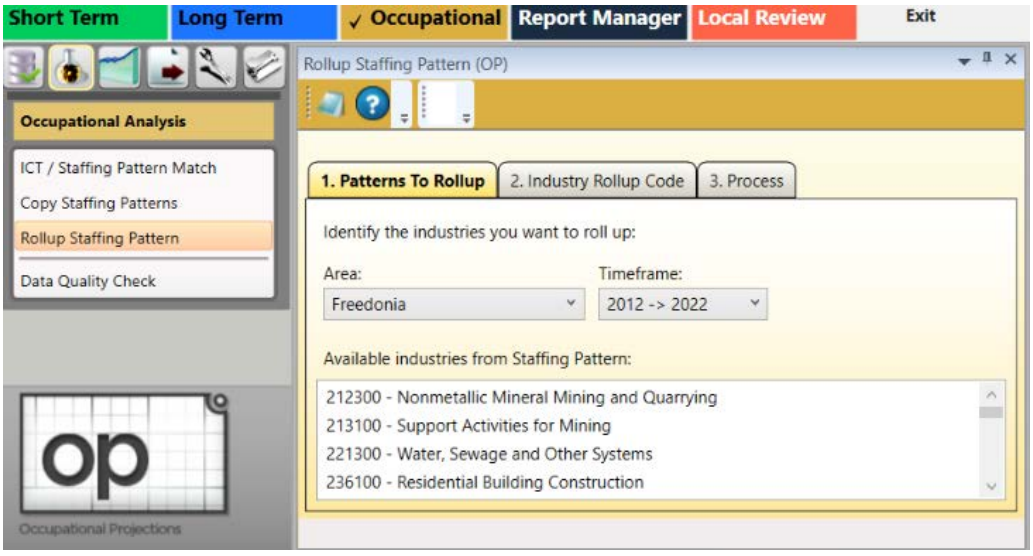


Figure 1: Rollup Staffing Pattern module

Rollup Staffing Patterns

1. Under the **Patterns to Rollup** tab, select an **Area** from the drop-down menu.

2. Select the **Timeframe** from the drop-down menu.

3. **Select the industry** whose staffing pattern is to be rolled up into another industry.

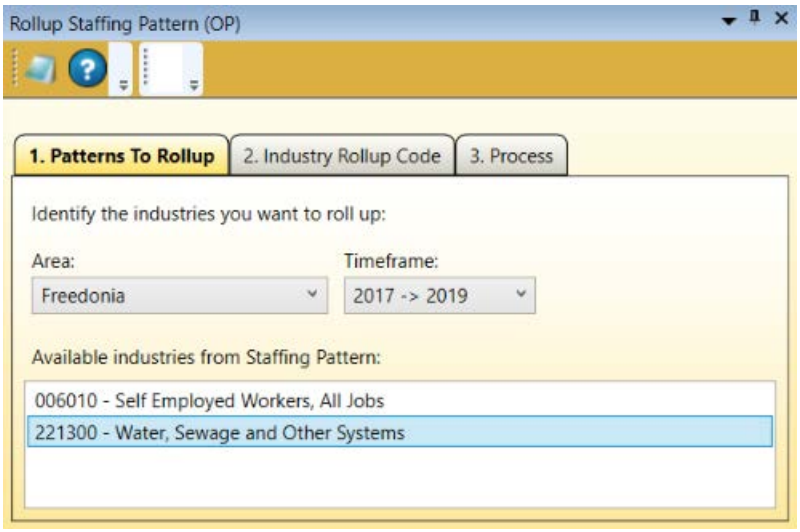


Figure 2: Area and time frame choices selected

4. Click the **Industry Rollup Code** tab. On this tab is a list of all ICT industries for which there is not a corresponding staffing pattern.

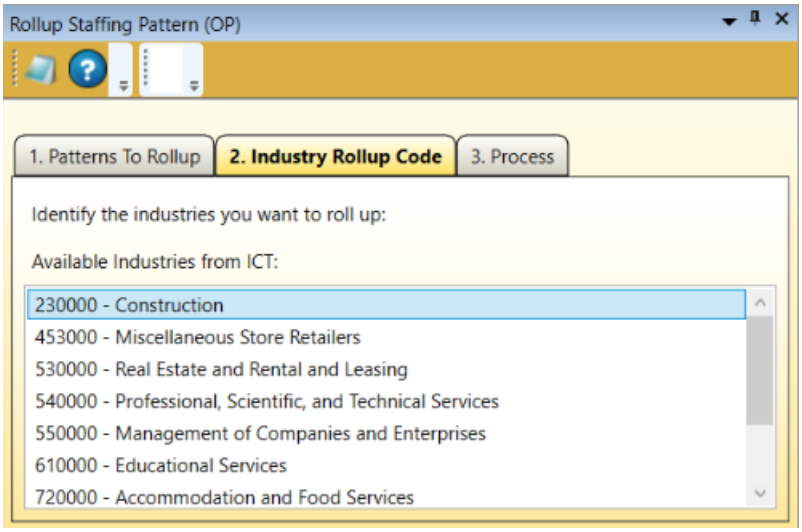


Figure 3: Selection from Industry Rollup Code tab

5. Select the industry from the **Available industries from ICT** list. These are the industries that do not have a corresponding staffing pattern match. You can only select one available industry.

6. Click the **Process** tab and review your selections.

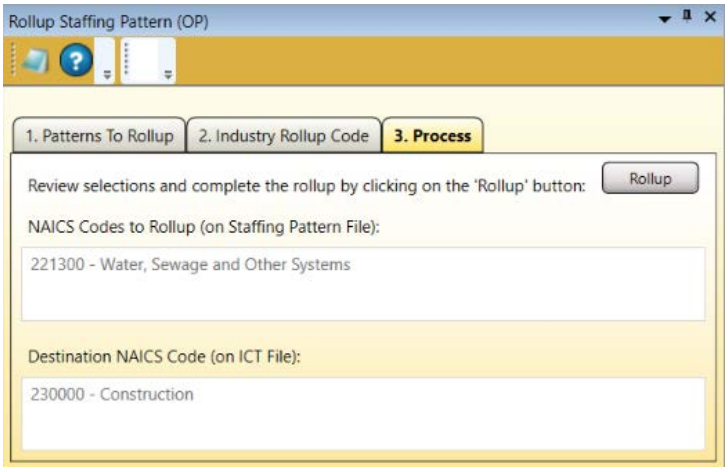


Figure 4: The selected industries are displayed under the Process tab

7. If your selections are correct, click **Rollup**. The Process tab will be cleared after processing the staffing pattern into the designated industry, because they now have a corresponding match. The **NAICS Codes to Rollup (on Staffing Pattern File)** and **Destination NAICS Code (on ICT File)** areas of the screen will empty to reflect completion of the rollup process.

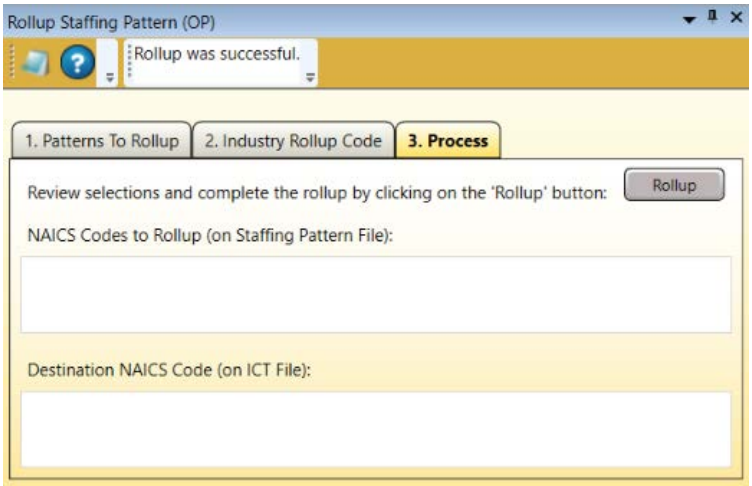


Figure 5: The staffing pattern rollup was successful

Related Content

- Edit ICT
- Edit Staffing Pattern

Data Quality Check

The **Data Quality Check** module looks for data problems in the database that will result in invalid results if not resolved. If industries or occupations are listed on the screen, you need to ensure they are removed. If not, they will be included twice, which will result in an over-count of projections data when it is aggregated.

Screen Controls

- **Select an Area** drop-down menu
- **Select a Timeframe** drop-down menu
- **Occupation** tab
- **Industry** tab

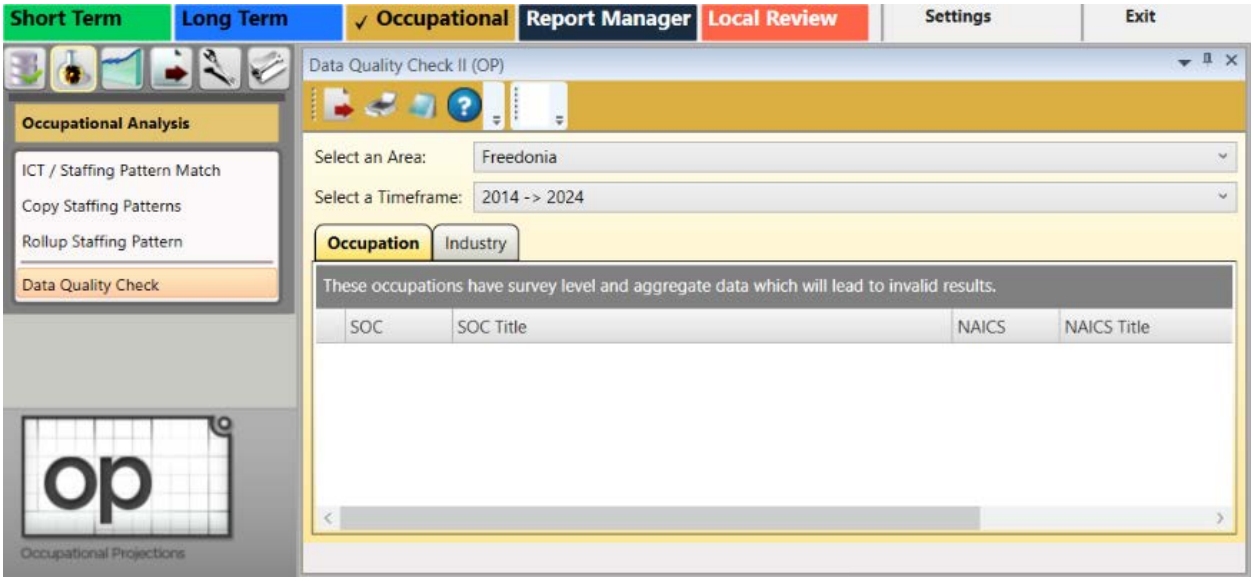


Figure 1: Data Quality Check module

Check the Quality of the Data

1. **Select an Area** from the drop-down menu.
2. **Select a Timeframe**. After searching the database, the results are displayed.
3. If there are no errors under the **Occupation** tab, select the **Industry** tab.

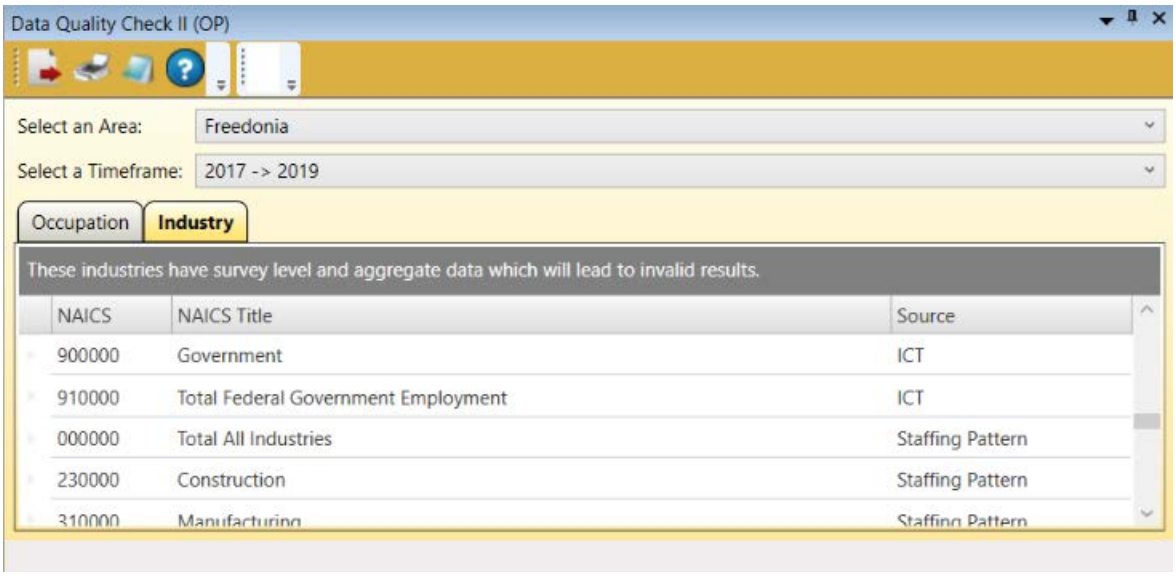


Figure 2: Industries found requiring corrective active

Occupational data with errors will display under the **Occupation** tab. If there were industries found with errors, they will be listed under the **Industry** tab. Data with errors will lead to invalid results. The **Source** column lists where the error is occurring. Depending on the source of the data with errors, use the Edit ICT or Edit Staffing Pattern modules to correct the errors.

Occupational Projections Menu Items

Occupational Projections Menu Introduction

Use the **Occupational Projections** group menu to calculate projections and self-employed staffing patterns, reconcile, aggregate, process openings, and modify confidentiality.

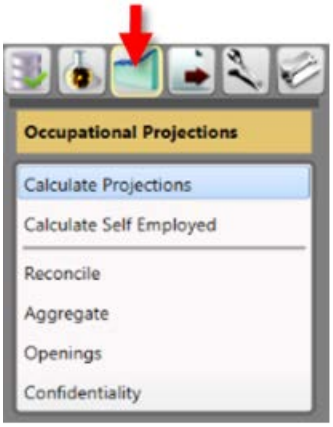


Figure 1: Occupational Projections group menu

The Occupational Projections group menu contains the following selections:

- Calculate Projections
- Calculate Self Employed
- Reconcile
- Aggregate
- Openings
- Confidentiality

Calculate Projections

Use the **Calculate Projections** module to calculate industry and occupation totals. ICT and staffing pattern data for each industry must be in the Occupational Projections system before calculating projections.

For additional information on the process used to calculate projections, visit this link.

Screen Controls

- **Select an Area** drop-down menu
- **Select a Timeframe** drop-down menu
- **Industry Totals** tab
- **Occupations Within Industry** tab
  - **Industry** drop-down menu
  - **Change Factor** field
- **View Industries** radio button
- **View Occupations** radio button
  - **Occupation Totals** tab
  - **Industries Within Occupation** tab
- **Calculate Projections** button

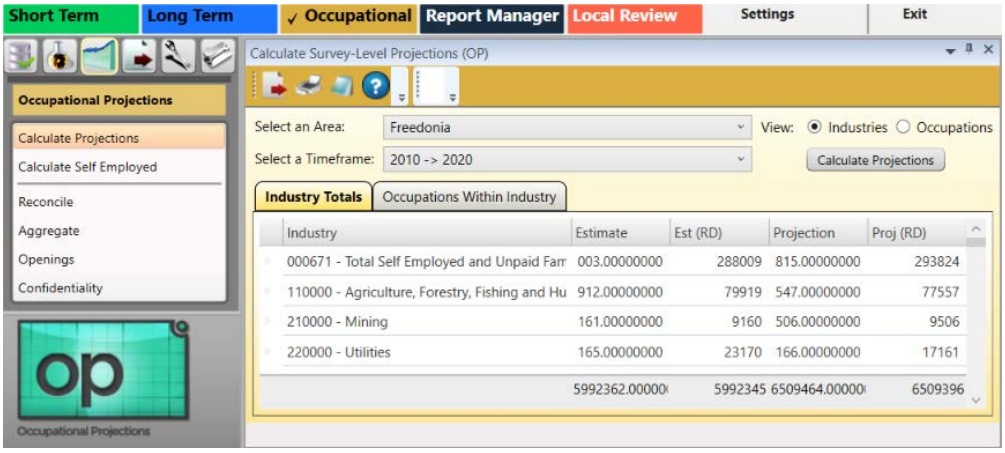


Figure 1: Calculate Projections module

View the Industry or Occupation Totals

1. **Select an Area**.
2. **Select a Timeframe**.
3. Select either **View Industries** or **Occupations** radio buttons.

☞If you select **View Occupations** radio button, the occupations roll up and display on the **Occupation Totals** tab without clicking **Calculate Projections**. Selecting the **View Occupations** button disables the **Calculate Projections** button.

4. Click **Calculate Projections**. A Calculate Projections dialog box will be displayed.

5. By selecting **Yes**, the data will be calculated and displayed. Select **No** to cancel the process.

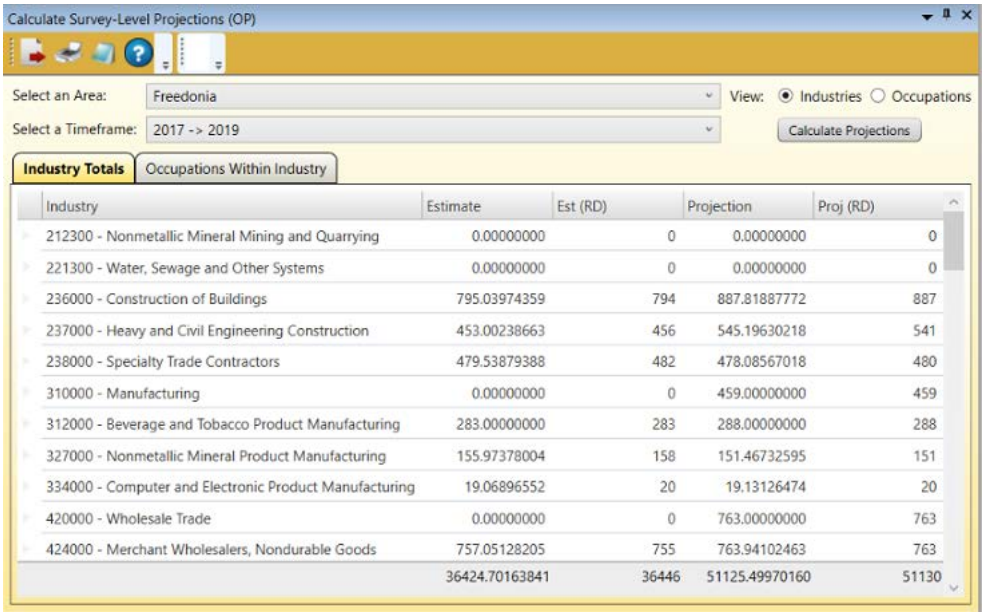
Industries

The **Industry Totals** tab displays the industry:

- Estimate
- Estimate Value Rounded (Est (RD))
- Projection
- Projection Value Rounded (Proj (RD))

The **Industry Totals** tab calculates projections from the industries view. On the tab, projections are calculated for all occupations within all industries.

☞All fields are sortable by clicking on a column header. For example, to sort by industry, click on the **Industry** column header.



Industry	Estimate	Est (RD)	Projection	Proj (RD)
212300 - Nonmetallic Mineral Mining and Quarrying	0.00000000	0	0.00000000	0
221300 - Water, Sewage and Other Systems	0.00000000	0	0.00000000	0
236000 - Construction of Buildings	795.03974359	794	887.81887772	887
237000 - Heavy and Civil Engineering Construction	453.00238663	456	545.19630218	541
238000 - Specialty Trade Contractors	479.53879388	482	478.08567018	480
310000 - Manufacturing	0.00000000	0	459.00000000	459
312000 - Beverage and Tobacco Product Manufacturing	283.00000000	283	288.00000000	288
327000 - Nonmetallic Mineral Product Manufacturing	155.97378004	158	151.46732595	151
334000 - Computer and Electronic Product Manufacturing	19.06896552	20	19.13126474	20
420000 - Wholesale Trade	0.00000000	0	763.00000000	763
424000 - Merchant Wholesalers, Nondurable Goods	757.05128205	755	763.94102463	763
	36424.70163841	36446	51125.49970160	51130

Figure 2: View Industries radio button and Industry Total tab selected

On the **Occupations Within Industry** tab, select an **Industry** from the drop-down to view the individual occupations that make up that industry. You can view the individual occupations' specific:

- Estimate
- Est (RD)
- Projection
- Proj (RD)

Select an individual **Industry** from the drop-down to calculate projections for all occupations within a single industry.

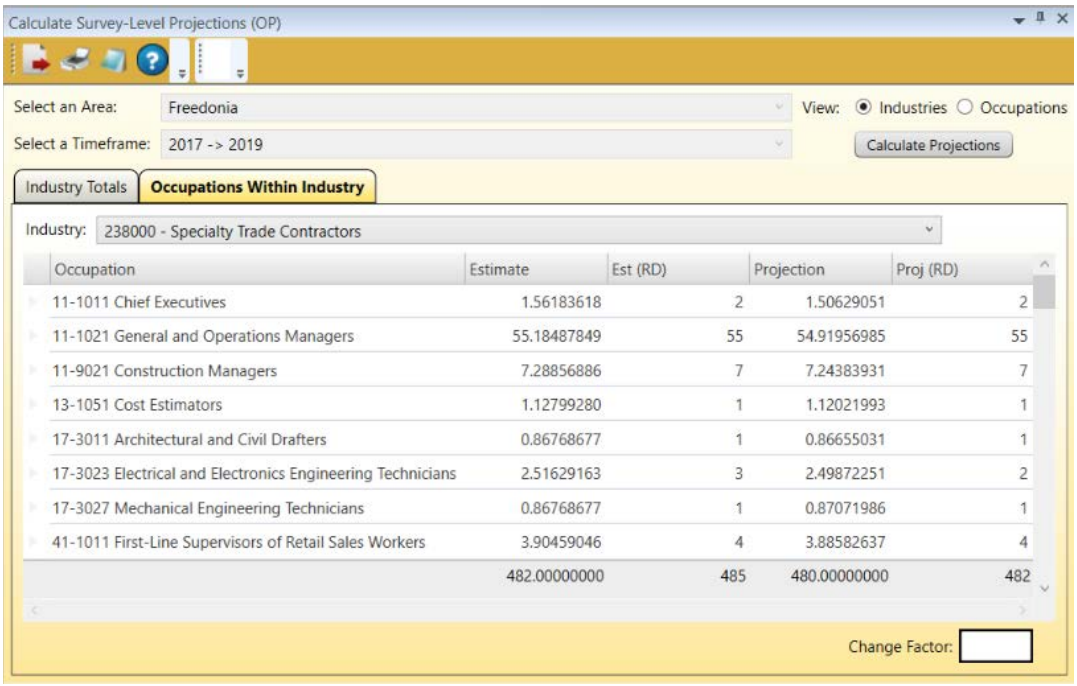


Figure 3: Industry selected under the Occupations Within Industry tab

Select an **Occupation** in the table to display the **Change Factor** for that occupation. The change factor can be edited and the projection for the select occupation re-calculated. If you go back to the **Industry Totals** tab and click the **Calculate Projections** button, the changes you made are overridden.

Occupations

By selecting the **View Occupations** radio button, the occupation rollups will load and the **Occupation Totals** and **Industries Within Occupation** tabs will become available. The **Calculate Projections** button will become unavailable in the Occupations view.

The **Occupation Totals** tab displays each occupation's:

- Estimate
- Estimate Value Rounded (Est (RD))
- Projection
- Projection Value Rounded (Proj (RD))

On the **Industries Within Occupation** tab, select an occupation to view the industry-specific:

- Estimate
- Est (RD)
- Projection
- Proj (RD)

Select the occupation you want to view from the **Occupation** drop-down menu. The data will change to show each instance of where that occupation is employed within an industry.

Related Content

- Calculate Projections (Statistical and Technical Terms)

Calculate Self Employed

Use the **Calculate Self Employed** module to generate self-employed staffing patterns. Once projections are calculated for all industries using the Calculate Projections module, the number of self-employed workers needs to be calculated using the national ratios.

For additional information on the self employed calculations, visit this link.

Screen Controls

- **Select Area** drop-down
- **Select Timeframe** drop-down
- **Create ICT records** check box
- **Process** button

Figure 1: Calculate Self Employed Staffing Patterns module

Generate Self Employed Staffing Patterns

1. Select an area from the **Select Area** drop-down menu.
2. Select a time frame from the **Select Timeframe** drop-down menu.
3. If ICT values for the selected area and time frame do not exist or if you want to overwrite the current values, click the **Create ICT records** check box.

☞If ICT values already exist, a message displays to **Check the Create ICT records** check box to overwrite.

4. Click **Process**. When processing is complete, the Creating Self Employed ICT records dialog box will be displayed.

☞If the **Process** button is unavailable, navigate to the Update Database module under the **Occupational Utilities** group menu and press the **Update National Data Files** button.

Use the Edit Staffing Pattern module to view the calculated values and the occupations included in the self-employed industry. If you selected the **Create ICT records** option, use the Edit ICT module to view the calculated values.

Related Content

- Calculate Self Employed (Statistical and Technical Terms)

Reconcile

Use the **Reconcile** module to ensure the occupational projection totals for each industry match the ICT values. Whenever any projections data are changed, make sure the projections are re-reconciled to reflect the changes.

Screen Controls

- **Area** drop-down menu
- **Timeframe** drop-down menu
- **Reconcile** button

Reconcile the Difference Between ICT Values and Rounded (RD) Values

1. Select an **Area** from the drop-down menu.
2. Select a **Timeframe**.

Figure 1: Differences in the ICT values and the calculated RD values

3. Click the **Reconcile** button. After the data is reconciled, the Industries, their Base ICT, Base Value Rounded (RD), Projection (ICT), and Projection (RD) will be displayed.

Aggregate

Use the **Aggregate** module to aggregate the Industry and Occupation sub-categories into the parent category and to compute the confidentiality value.

Screen Controls

- **Area** drop-down menu
- **Timeframe** drop-down menu
- **Industry Subtotal Level** drop-down menu
- **Occupation Subtotal Level** drop-down menu
- **Process** button

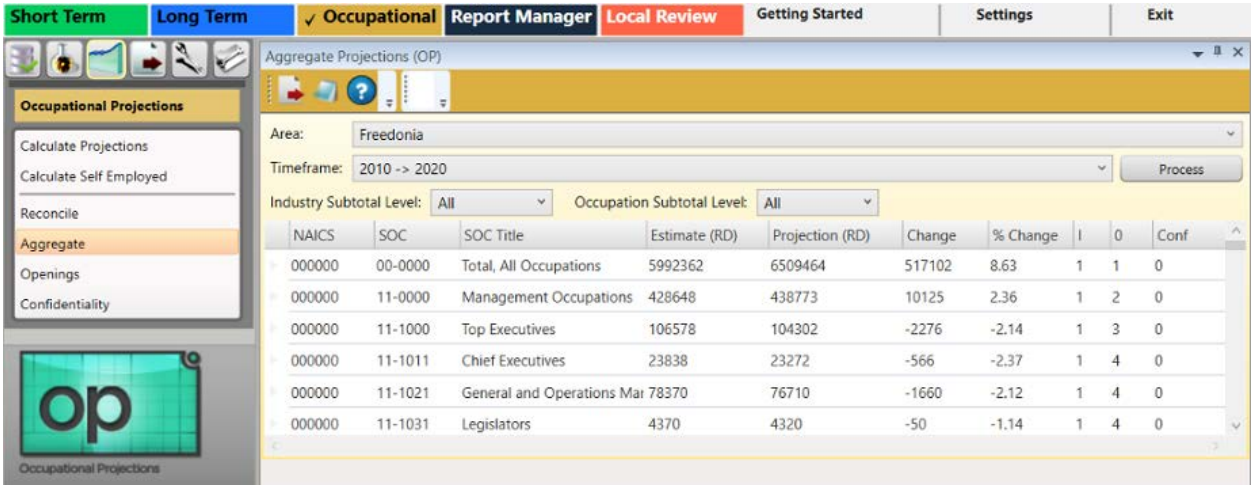
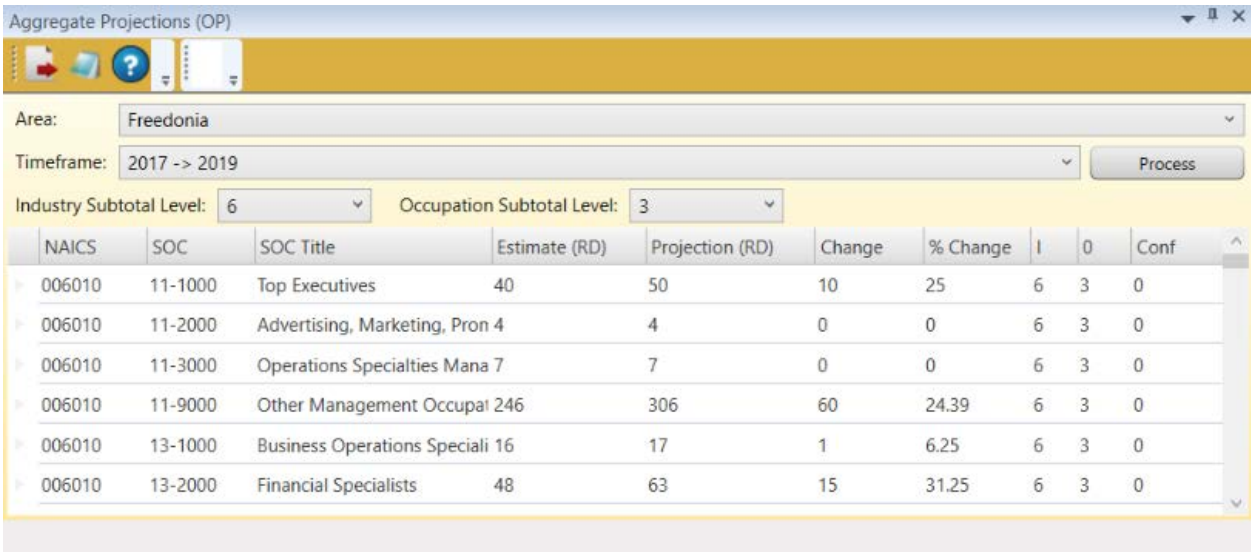


Figure 1: The Aggregate module

Aggregate the Sub-categories to Parent Categories

1. Select an **Area** from the drop-down menu.
2. Select a **Timeframe**.
3. Click the **Process** button. When complete, the calculations will be displayed, aggregated (from Freedonia, in this example) during the 2017 - 2019 time frame:



NAICS	SOC	SOC Title	Estimate (RD)	Projection (RD)	Change	% Change	I	0	Conf
006010	11-1000	Top Executives	40	50	10	25	6	3	0
006010	11-2000	Advertising, Marketing, Pron	4	4	0	0	6	3	0
006010	11-3000	Operations Specialties Mana	7	7	0	0	6	3	0
006010	11-9000	Other Management Occupat	246	306	60	24.39	6	3	0
006010	13-1000	Business Operations Speciali	16	17	1	6.25	6	3	0
006010	13-2000	Financial Specialists	48	63	15	31.25	6	3	0

Figure 2: Aggregated data is displayed

☞To edit the confidentiality flag, **right click** the occupation, then select **Edit Confidentiality**. You can select or de-select any of the values. Click **Save**. If you click **Process** again, the original confidentiality flag is used.

☞Filter the displayed information by selecting the **Industry Subtotal Level** and the **Occupation Subtotal Level** drop-down boxes.

Openings

Use the **Openings** module to calculate the number of job openings based on transfers, exits, and employment changes for specific occupations.

For additional information on the openings calculations, visit this link.

Screen Controls

- **Select an Area** drop-down menu
- **Select a Timeframe** drop-down menu
- **Show** drop-down menu
- **Process** button

Figure 1: Openings module

Calculate Openings

1. **Select an Area** from the drop-down menu.
2. **Select a Timeframe**.
3. Click the **Process** button. When the creation and saving of records is complete, a list of openings for the selected area and time frame will be displayed:

Lvl	SOC	Title	Transfers	Exits	Change	Total
1	00-0000	Total, All Occupations	5,996	4,434	15,532	25,962
2	11-0000	Management Occupations	468	192	1,564	2,224
3	11-1000	Top Executives	305	110	1,226	1,641
4	11-1011	Chief Executives	10	7	12	29
4	11-1021	General and Operations Managers	293	102	1,215	1,610
4	11-1031	Legislators	2	1	-1	2
3	11-2000	Advertising, Marketing, Promotions, Public Relations, and Sales M	15	5	0	20
4	11-2011	Advertising and Promotions Managers	1	0	0	1

Figure 2: List of openings associated with the selected parameters

4. In the **Show** field, select the SOC level to display (Level 1 - Level 5, or all).

Related Content

- Edit Separation Rates
- Occupational Separations (Statistical and Technical Terms)

Confidentiality

The **Confidentiality** module updates confidentiality values based on a threshold specified by the user. This causes the flagging of any base or projected employment cell that is less than the threshold value.

Screen Controls

- **Select Area** drop-down menu
- **Select Timeframe** drop-down menu
- **Threshold for confidentiality** spinner
- **Process** button

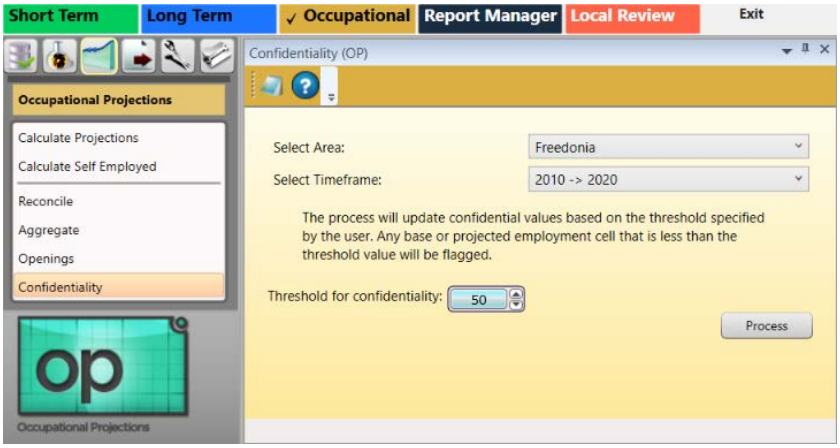


Figure 1: Confidentiality module

Update the Confidentiality Threshold

1. Select an area from the **Select Area** drop-down menu.
2. Select a time frame from the **Select Timeframe** drop-down menu.
3. Use the **Threshold for confidentiality** spinner to select the desired threshold parameter.

☞The threshold is a minimum employment value. All employment cells less than the value are flagged as confidential. The value is determined by each state.

4. Click the **Process** button. An **Updating Confidentiality Records** dialog box will be displayed.
5. Click **OK** to return to the Confidentiality screen.

Occupational Output Menu Items

Occupational Output Introduction

The **Occupational Output** group menu enables the reporting of occupational projections data for a specific area and time frame.

Figure 1: Occupational Output group menu

The Occupational Output group menu contains the following selections:

- Diagnostic Exports
- WID Extract Version 2.4
- WID Extract Version 2.5
- WID Extract Version 2.6
- WID Extract Version 2.7
- Export Occupational Projections
- Sum of Areas Comparison

Diagnostic Exports

Use the **Diagnostic Exports** module to generate a Mega Matrix and/or a Growth and Education file. Both of these files are used to determine if any adjustments need to be done prior to doing any final exports.

Screen Controls

- **Select an Area** drop-down menu
- **Timeframe** drop-down menu
- **Mega Matrix - File** field
- **Growth & Education - File** field
- **...** button

> ☞To use the module, projections and openings need to be calculated and aggregated first.

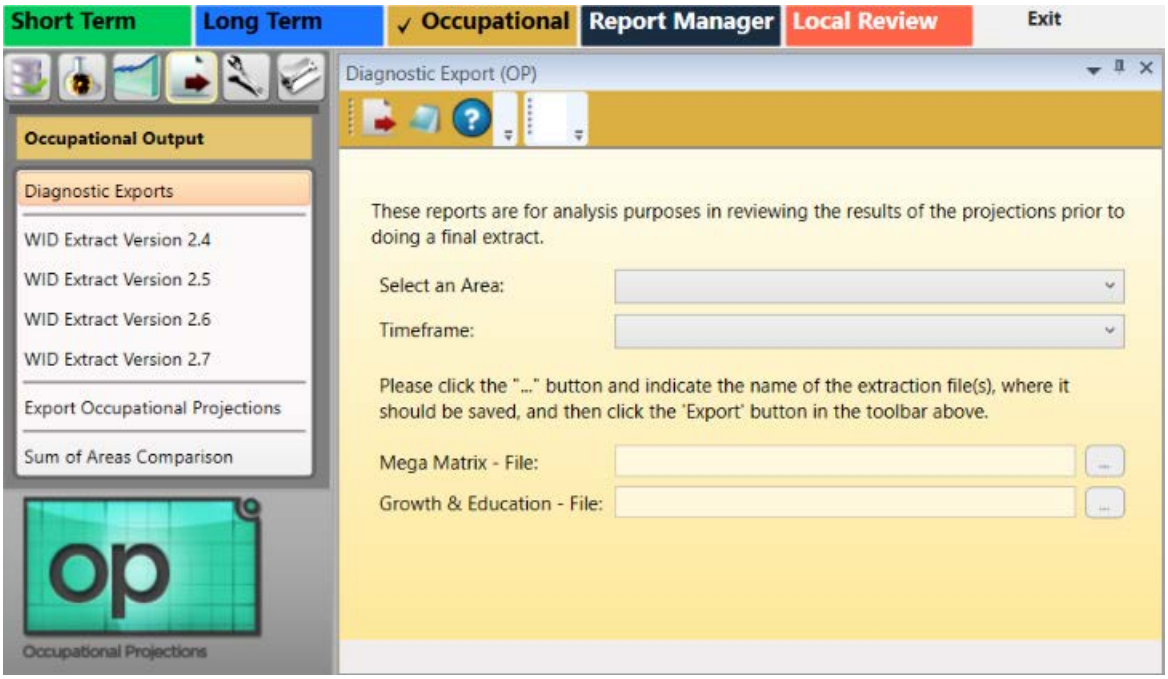


Figure 1: Diagnostic Exports module

Data Not Ready for Exporting

Clicking the **Diagnostic Exports** screen may produce the following dialog box:

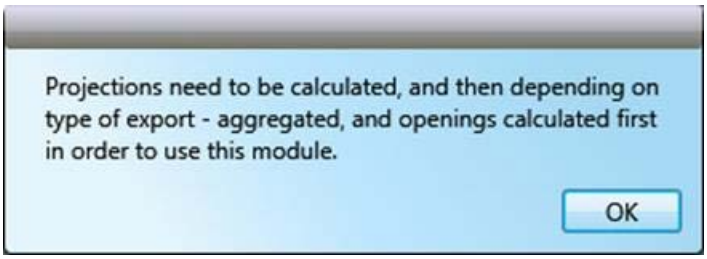


Figure 2: Processes to complete before Diagnostic Exports will process

☞This dialog box indicates there are necessary data processes that are not complete. These processes create the data required for all the sections in Occupational Output. To proceed with data exports, **complete all projections in the Occupational Projections group menu**.

Data Prepared for Exporting

If the dialog box (in Figure 2) does not display, proceed with the data export. To process the Occupational Output items:

1. **Select an Area** from the drop-down menu.
2. Select a **Timeframe**.
3. Type a location to save the **Mega Matrix File**. Browse to a location by pressing the **...** button.
4. Type a location to save the **Growth & Education File**. Browse to a location by pressing the **...** button.

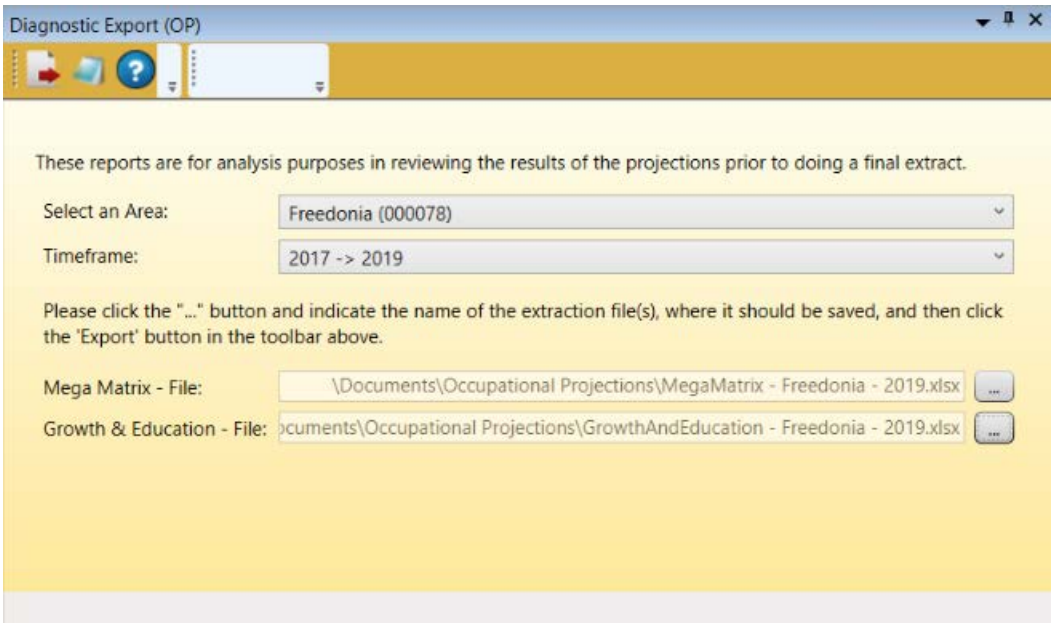


Figure 3: Required information has been entered into the Diagnostic Exports fields

5. Click the **Export** icon in the Active Module Toolbar when the fields have been filled in. This will export the **Diagnostic Reports** to the selected location(s). A dialog box will be displayed to indicate the export is complete.

6. Click **OK** to return to the Diagnostic Exports module.

WID Extract Version 2.4

Use the **Workforce Information Database (WID) Extract Version 2.4** module to create the files needed by your state WID database administrator for publication of projection results on your state website.

Screen Controls

- **Select Area** drop-down
- **Select Timeframe** drop-down
- **Period ID** field
- **Save Option** drop-down
  - **Single File**
  - **Separate Files**
  - **Auto-Named Files**
- **Directory & Crosswalk Files** tab
  - **inddir (Industry Directory)** check box
  - **occdir (Occupation Directory)** check box
  - **matxnaic (Matrix Industry Code to NAICS Crosswalk)** check box
  - **matxsoc (Matrix Occupation Code to SOC Crosswalk)** check box
- **Data Files** tab
  - **indprj (Industry Projections)** check box
  - **occprj (Occupation Projections)** check box
  - **iomatrix (Industry/Occupation Matrix)** check box
- **Multiple Areas** tab
  - **Combine geographic areas** check box

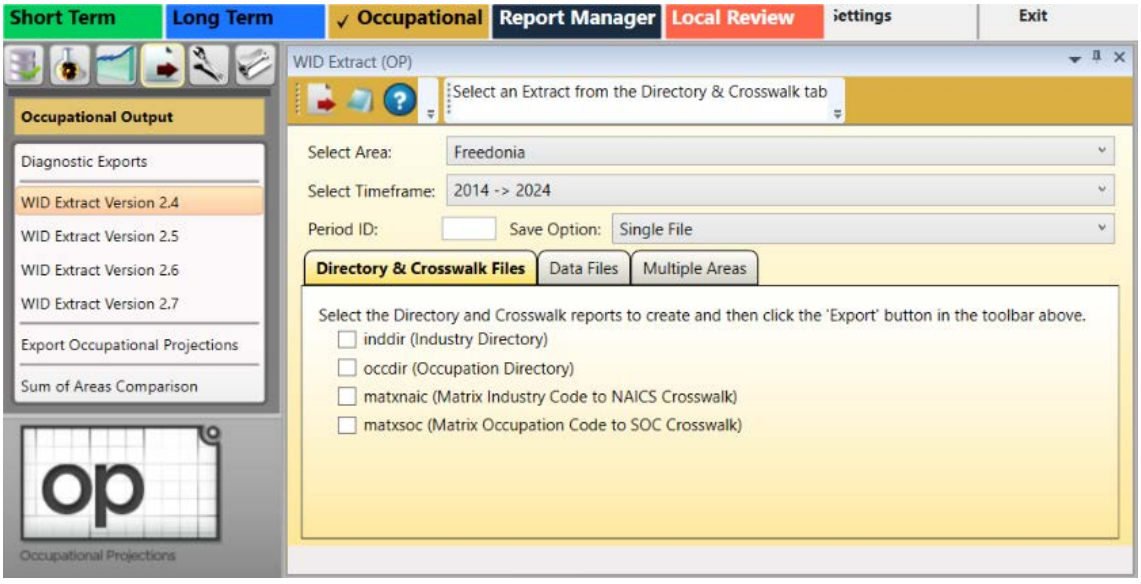


Figure 1: WID Extract Version 2.4 module

Extract Files for Your State's Website Using the WID Extract Version 2.4 Module

1. Select an area from the **Select Area** drop-down menu.

☞To select more than one area, use the Multiple Areas tab then export the files.

2. Select a time frame from the **Select Timeframe** drop-down menu.

3. Enter a **Period ID**. The Period ID is a state-specific, 2-digit indicator for target year and base year. The state database administrator can provide this value.

4. Select a **Save Option**.

You can select to create:

- Single File - if creating a single file, it can be saved as an .xls or .xlsx file
- Separate Files - if creating separate files, they can be saved as an .xls, .xlsx, or .csv file
- Auto-Named Files - auto-named files are saved as .csv files

Directory & Crosswalk Files Tab

1. On the Directory & Crosswalk Files tab, select the files to create.

- Industry Directory
- Occupation Directory
- Matrix Industry Code to NAICS Crosswalk
- Matrix Occupation Code to SOC Crosswalk

2. Click the **Export** icon in the Active Module Toolbar.

3. On the pop up window, select the location to save the file and enter a file name.

4. Click **Save** or **OK**.

Data Files Tab

☞Data files contain the actual projections data.

1. On the Data Files tab, select the files to create.

- Industry Projections - detail as well as summary level data
- Occupation Projections - detail as well as summary level data
- Industry/Occupation Matrix - detail or summary level

2. Click the **Export** icon in the tool bar.

3. On the pop up window, select the location to save the file and enter a file name.

4. Click **Save** or **OK**.

Multiple Areas Tab

☞Two or more areas must be selected.

1. On the Multiple Areas tab, select the areas to include.
    1. Select the area in the **Available Areas** box.
    2. Click the **>** button to add the area to the **Selected Areas** box.

    Or

    1. Right-click in the **Available Areas** box.
    2. Select **Add Selected**, **Select All**, or **Unselect All**.
2. Select **Combine geographic areas** to create one file combining all selected areas.
3. Click the **Export** icon in the Active Module Toolbar.
4. On the pop up window, select the location to save the file and enter a file name.
5. Click **Save** or **OK**.

WID Extract Version 2.5

Use the **Workforce Information Database (WID) Extract Version 2.5** module to create the files needed by your state WID database administrator for publication of projection results on your state website.

Screen Controls

- **Select Area** drop-down
- **Select Timeframe** drop-down
- **Period ID** field
- **Save Option** drop-down
  - **Single File**
  - **Separate Files**
  - **Auto-Named Files**
- **Directory & Crosswalk Files** tab
  - **inddir (Industry Directory)** check box
  - **occdir (Occupation Directory)** check box
  - **matxnaic (Matrix Industry Code to NAICS Crosswalk)** check box
  - **matxsoc (Matrix Occupation Code to SOC Crosswalk)** check box
- **Data Files** tab
  - **indprj (Industry Projections)** check box
  - **occprj (Occupation Projections)** check box
  - **iomatrix (Industry/Occupation Matrix)** check box
- **Multiple Areas** tab
  - **Combine geographic areas** check box

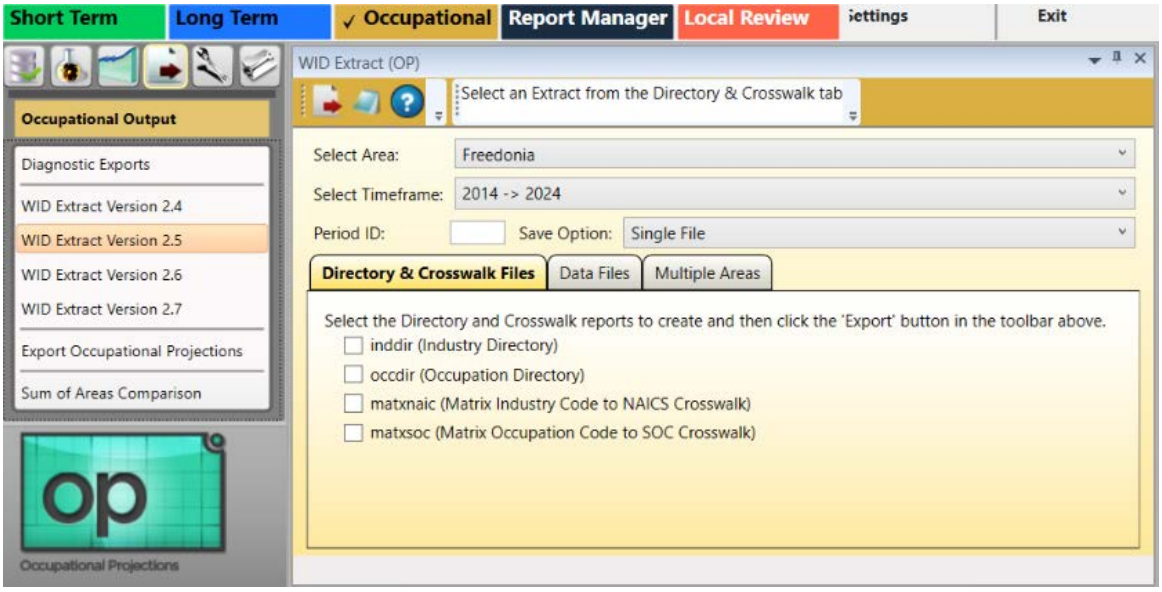


Figure 1: WID Extract Version 2.5 module

Extract Files for Your State's Website Using the WID Extract Version 2.5 Module

1. Select an area from the **Select Area** drop-down menu.

☞To select more than one area use the Multiple Areas tab then export the files.

2. Select a time frame from the **Select Timeframe** drop-down menu.

3. Enter a **Period ID**. The Period ID is a state-specific, 2-digit indicator for target year and base year. The state database administrator can provide this value.

4. Select a **Save Option**.

You can select to create:

- Single File - if creating a single file, it can be saved as an .xls or .xlsx file
- Separate Files - if creating separate files, they can be saved as an .xls, .xlsx, or .csv file
- Auto-Named Files - auto-named files are saved as .csv files

Directory & Crosswalk Files Tab

1. On the Directory & Crosswalk Files tab, select the files to create.

- Industry Directory
- Occupation Directory
- Matrix Industry Code to NAICS Crosswalk
- Matrix Occupation Code to SOC Crosswalk

2. Click the **Export** icon in the Active Module Toolbar.

3. On the pop up window, select the location to save the file and enter a file name.

4. Click **Save** or **OK**.

Data Files Tab

☞Data files contain the actual projections data.

1. On the Data Files tab, select the files to create.

- Industry Projections - detail as well as summary level data
- Occupation Projections - detail as well as summary level data
- Industry/Occupation Matrix - detail or summary level

2. Click the **Export** icon in the Active Module Toolbar.

3. On the pop up window, select the location to save the file and enter a file name.

4. Click **Save** or **OK**.

Multiple Areas Tab

☞Two or more areas must be selected.

1. On the Multiple Areas tab, select the areas to include.
    1. Select the area in the **Available Areas** box.
    2. Click the **>** button to add the area to the **Selected Areas** box.

    Or

    1. Right-click in the **Available Areas** box.
    2. Select **Add Selected**, **Select All**, or **Unselect All**.
2. Select **Combine geographic areas** to create one file combining all selected areas.
3. Click the **Export** icon in the tool bar.
4. On the pop up window, select the location to save the file and enter a name, if wanted.
5. Click **Save** or **OK**.

WID Extract Version 2.6

Use the **Workforce Information Database (WID) Extract Version 2.6** module to create the files needed by your state WID database administrator for publication of projection results on your state website.

Screen Controls

- **Select Area** drop-down
- **Select Timeframe** drop-down
- **Period ID** field
- **Save Option** drop-down
  - **Single File**
  - **Separate Files**
  - **Auto-Named Files**
- **Directory & Crosswalk Files** tab
  - **inddir (Industry Directory)** check box
  - **occdir (Occupation Directory)** check box
  - **matxind (Matrix Industry Code to NAICS Crosswalk)** check box
  - **matxocc (Matrix Occupation Code to SOC Crosswalk)** check box
- **Data Files** tab
  - **iomatrix (Industry/Occupation Matrix)** check box
- **Multiple Areas** tab
  - **Combine geographic areas** check box

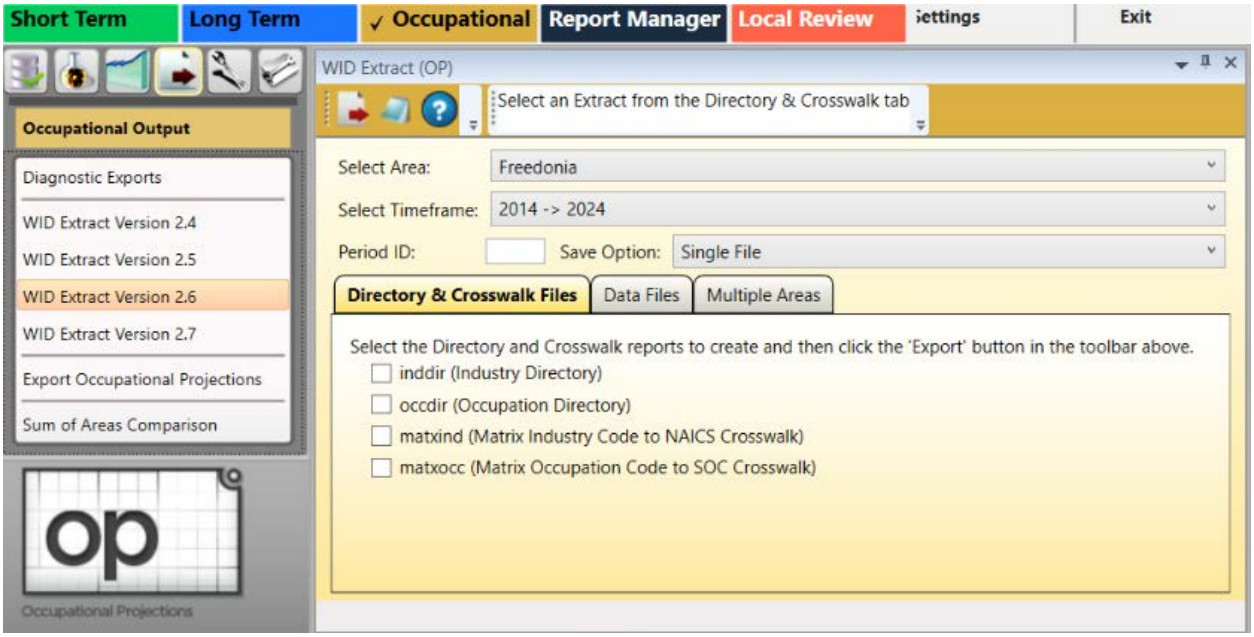


Figure 1: WID Extract Version 2.6 module

Extract Files for Your State's Website Using the WID Extract Version 2.6 Module

1. Select an area from the **Select Area** drop-down menu.

☞To select more than one area use the Multiple Areas tab then export the files.

2. Select a time frame from the **Select Timeframe** drop-down menu.

3. Enter a **Period ID**. The Period ID is a state-specific, 2-digit indicator for target year and base year. The state database administrator can provide this value.

4. Select a **Save Option**.

You can select to create:

- Single File - if creating a single file, it can be saved as an .xls or .xlsx file
- Separate Files - if creating separate files, they can be saved as an .xls, .xlsx, or .csv file
- Auto-Named Files - auto-named files are saved as .csv files

Directory & Crosswalk Files Tab

1. On the Directory & Crosswalk Files tab, select the files to create.

- Industry Directory
- Occupation Directory
- Matrix Industry Code to NAICS Crosswalk
- Matrix Occupation Code to SOC Crosswalk

2. Click the **Export** icon in the Active Module Toolbar.

3. On the pop up window, select the location to save the file and enter a file name.

4. Click **Save** or **OK**.

Data Files Tab

☞Data files contain the actual projections data.

1. On the Data Files tab, select Industry/Occupation Matrix.

2. Click the **Export** icon in the tool bar.

3. On the pop up window, select the location to save the file and enter a file name.

4. Click **Save** or **OK**.

Multiple Areas Tab

☞Two or more areas must be selected.

1. On the Multiple Areas tab, select the areas to include.
    1. Select the area in the **Available Areas** box.
    2. Click the **>** button to add the area to the **Selected Areas** box.

    Or

    1. Right-click in the **Available Areas** box.
    2. Select **Add Selected**, **Select All**, or **Unselect All**.
2. Select **Combine geographic areas** to create one file combining all selected areas.
3. Click the **Export** icon in the Active Module Toolbar.
4. On the pop up window, select the location to save the file and enter a name, if wanted.
5. Click **Save** or **OK**.

WID Extract Version 2.7

Use the **Workforce Information Database (WID) Extract Version 2.7** module to create the files needed by your state WID database administrator for publication of projection results on your state website. For additional information on the WID version 2.7 database structure, click here.

Screen Controls

- **Select Area** drop-down
- **Select Timeframe** drop-down
- **Period ID** field
- **Save Option** drop-down
  - **Single File**
  - **Separate Files**
  - **Auto-Named Files**
- **Directory & Crosswalk Files** tab
  - **inddir (Industry Directory)** check box
  - **occdir (Occupation Directory)** check box
  - **matxind (Matrix Industry Code to NAICS Crosswalk)** check box
  - **matxocc (Matrix Occupation Code to SOC Crosswalk)** check box
- **Data Files** tab
  - **iomatrix (Industry/Occupation Matrix)** check box
- **Multiple Areas** tab
  - **Combine geographic areas** check box

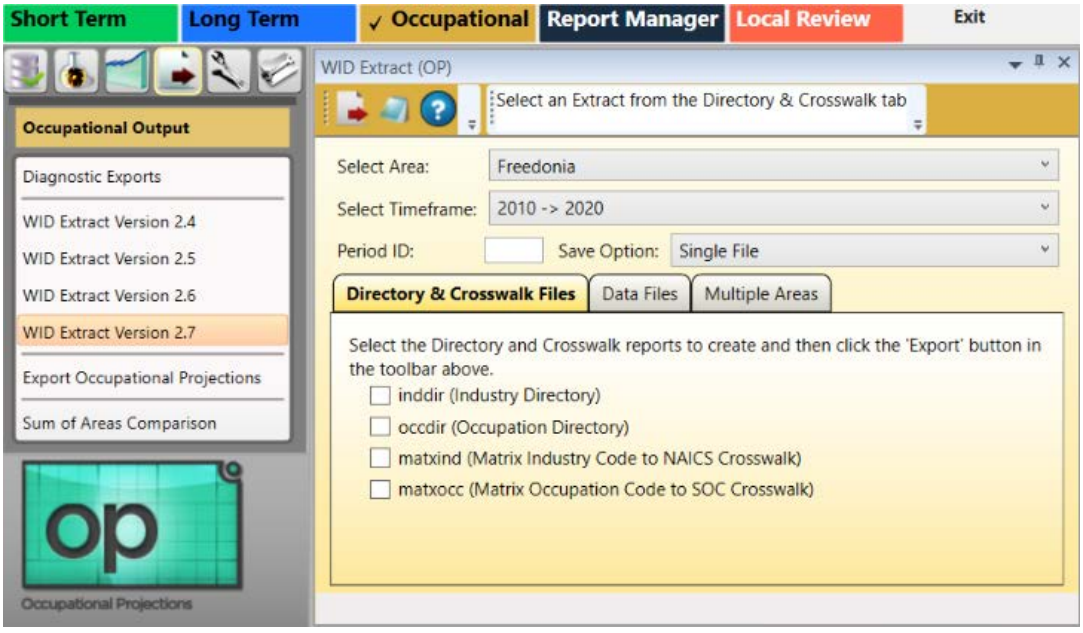


Figure 1: WID Extract Version 2.7 module

Extract Files for Your State's Website Using the WID Extract Version 2.7 Module

1. Select an area from the **Select Area** drop-down menu.

☞To select more than one area, use the Multiple Areas tab.

2. Select a time frame from the **Select Timeframe** drop-down menu.

3. Enter a **Period ID**. The Period ID is a state-specific, 2-digit indicator for target year and base year. The state database administrator can provide this value.

4. Select the desired option from the **Save Option** drop-down menu. You can create:

- Single File - if creating a single file, it can be saved as an .xls or .xlsx file
- Separate Files - if creating separate files, they can be saved as an .xls, .xlsx, or .csv file
- Auto-Named Files - auto-named files are saved as .csv files

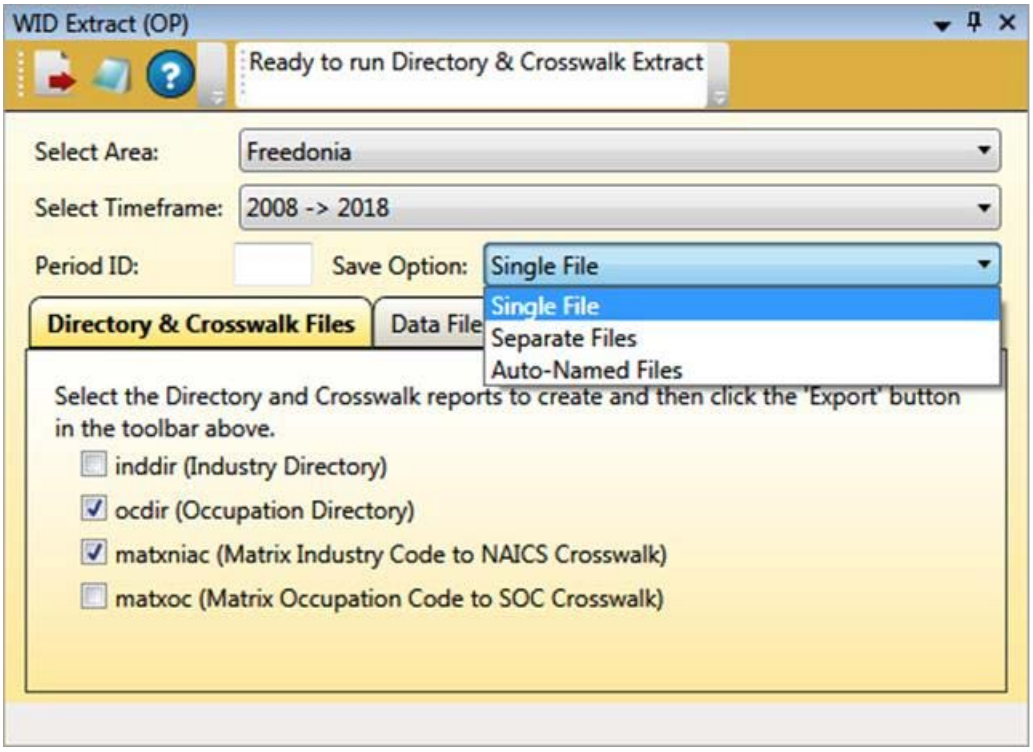


Figure 2: Make a selection from the Save Option drop-down menu

Directory & Crosswalk Files Tab

1. Click the **Directory & Crosswalk Files** tab.
2. Select the check box(es) for the report(s) to create.

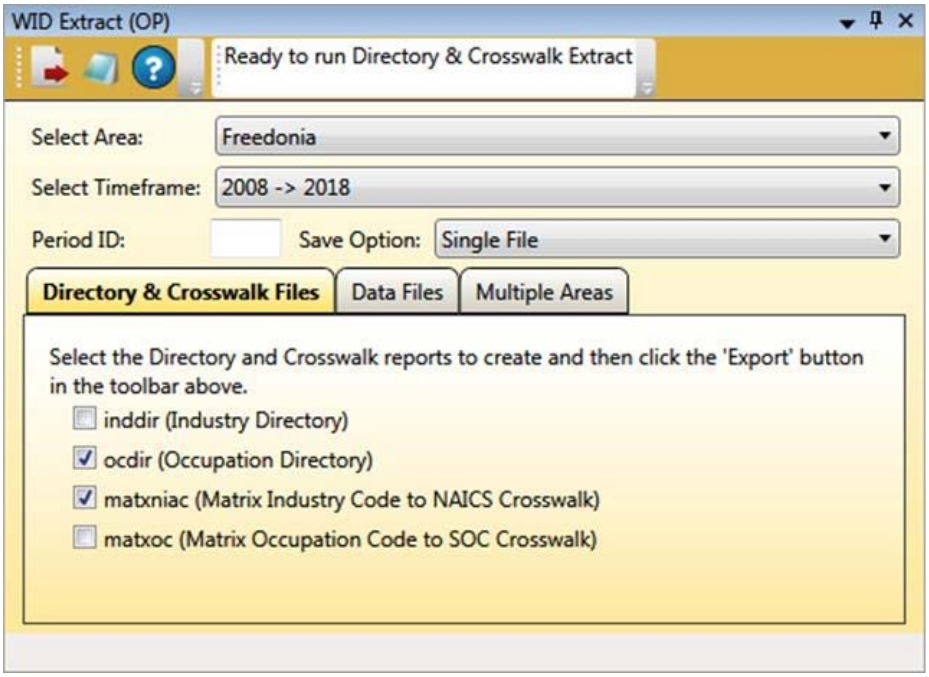


Figure 3: Directory & Crosswalk Files tab

3. Click the **Export** icon in the Active Module Toolbar. The selected report(s) will be exported.

Data Files Tab

1. Click the **Data Files** tab.
2. Select the check box(es) for the report(s) to create.

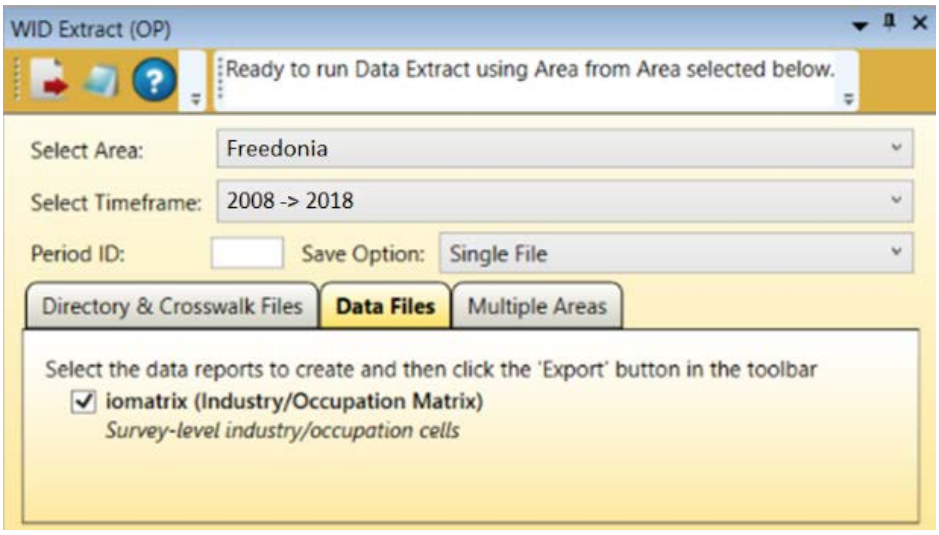


Figure 4: Data Files tab

3. Click the **Export** icon. The selected report(s) will be exported.

Multiple Areas Tab

1. Click the **Multiple Areas** tab.
2. Select the **Combine geographical areas** check box, if desired.
3. Select one of the **Areas** to combine from the **Available Areas** section.

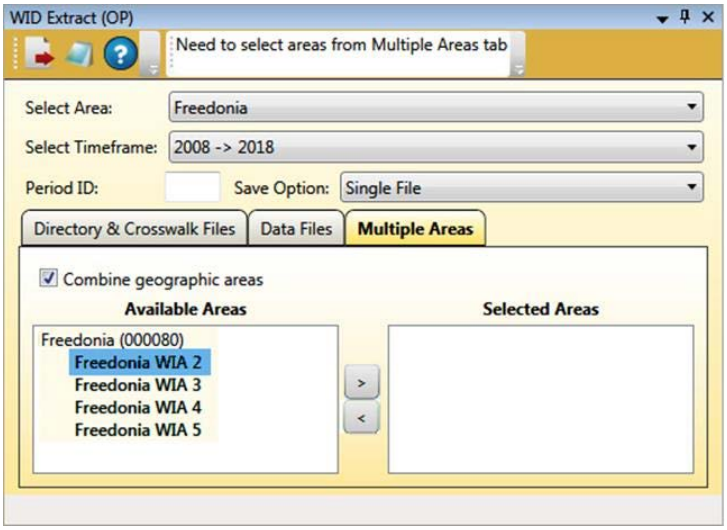


Figure 5: Multiple Areas tab

4. Click the **Add** > button to move the selected Area to the **Selected Areas** section.

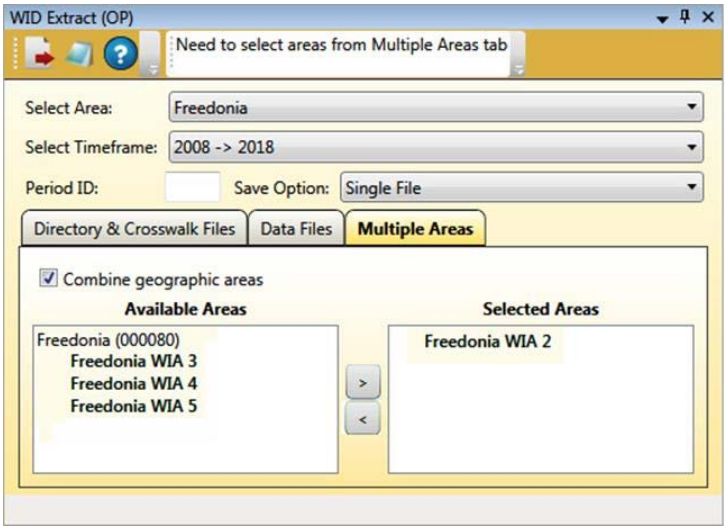


Figure 6: Freedonia WIA 2 added to the Selected Areas section

5. Repeat steps 3 and 4 for each additional area to combine. Or, use the context menu choices (by right-clicking): **Add Selected**, **Select All**, or **Unselect All**.

☞Selecting more than one choice at a time is possible using the Shift or Ctrl keys. For more information on selecting multiple items, click here.

☞Two or more areas must be selected.

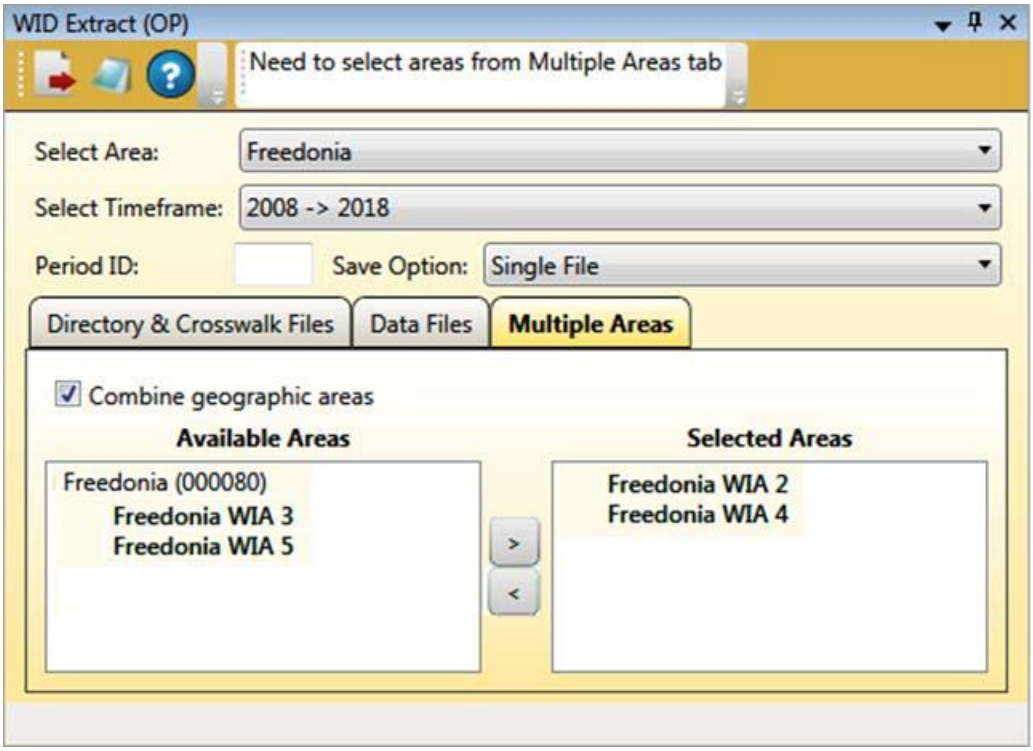


Figure 7: Freedonia WIA 2 and WIA 4 are combined

6. Click the **Export** icon on the Active Module Toolbar. The export combines the selected areas.

Export Occupational Projections

The **Export Occupational Projections** module enables the export of Occupational Directory data to Report Manager.

Screen Controls

- **Source Area(s)** drop-down
- **Source Timeframe** drop-down

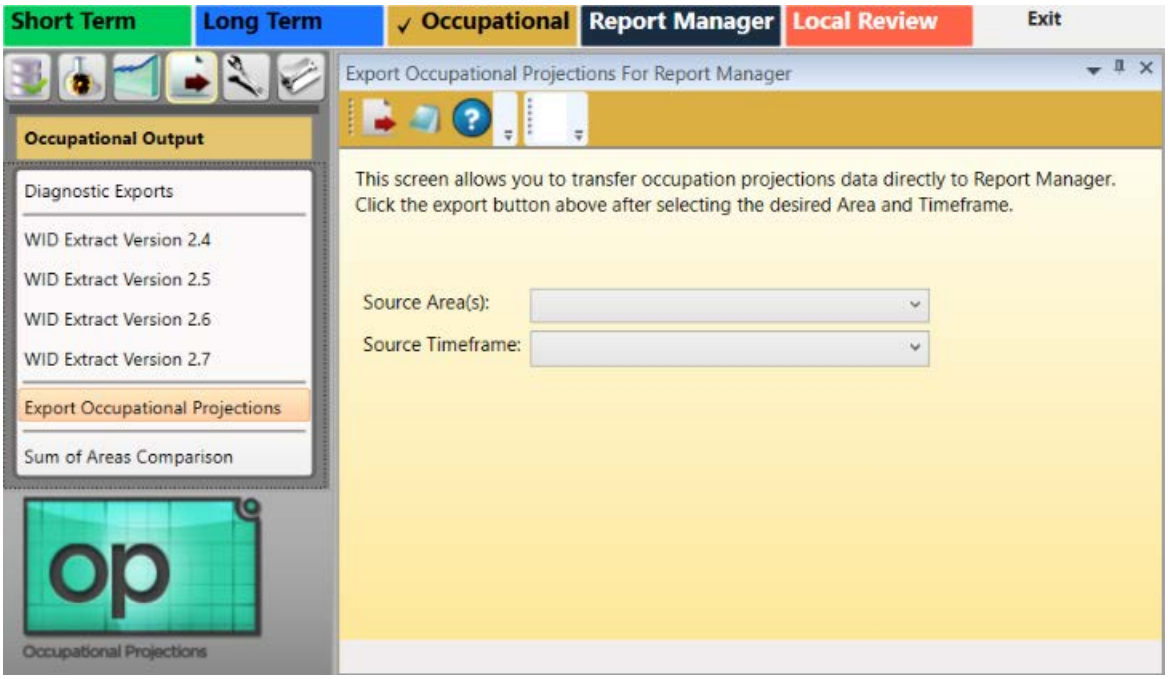


Figure 1: Export Occupational Projections module

Export Occupational Projections Data

☞To export to Report Manager, log into Report Manager through the Projections Suite.

1. Select an area from the **Source Area(s)** drop-down menu.
2. Select a time frame from the **Source Timeframe** drop-down menu.
3. Click the **Export** button in the Active Module Toolbar.

☞Be sure to run the Data Quality Check from the **Occupational Analysis** group menu before exporting the data into Report Manager.

Related Content

- Report Manager

Sum of Areas Comparison

The **Sum of Areas Comparison** module facilitates comparison of sum of areas occupational estimates to state occupational estimates.

For each occupational line, the report shows the state estimate, the sum of areas estimate, the absolute difference, and the percent difference. To highlight potential outliers, the percent deviation of regional occupational estimates from state occupational estimates is also displayed.

This measure of deviation compares each regional occupational estimate as a percent of the regional total, to the state occupational estimate, as a percent of the state total. The analysis is provided separately for base year estimates and projected year estimates. Sort the output on absolute differences to review the largest state to sum of area differences. Review region percent deviations to identify potential estimate adjustments. While a base year analysis is provided, a review of projected estimates is the focus of the analysis.

Screen Controls

- **Select an Area Group** drop-down menu
- **Select Timeframe** drop-down menu
- **Process** button

Figure 1: Sum of Areas Comparison module

Perform a Sum of Areas Comparison

1. **Select an Area Group** from the drop-down menu.
2. Select a time frame with the **Select Timeframe** drop-down menu.
3. Click the **Process** button.
4. When processing is complete, the Area Comparison Complete dialog box will be displayed. Click **OK**.
5. Click the **Export** button in the Active Module Toolbar. A **Save as** window will be displayed.
6. Name the file and select an export location. Click **Save**.
7. A **Finished** dialog box will be displayed. Click **OK**.

Occupational Compare Menu Items

Occupational Compare Introduction

Use the **Occupational Compare** group menu to configure an Upload Area account, upload data, and create geographic comparisons.

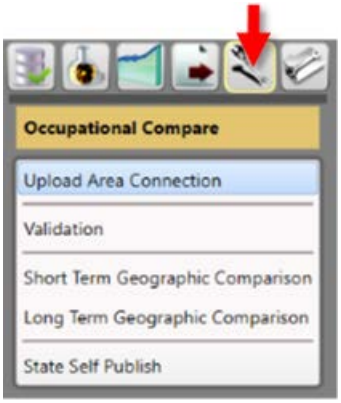


Figure 1: Occupational Compare group menu

The Occupational Compare group menu contains the following selections:

- Upload Area Connection
- Validation
- Short Term Geographic Comparison
- Long Term Geographic Comparison
- State Self Publish

Upload Area Connection

Use the **Upload Area Connection** module to configure an Upload Area account. Contact the Utah Projections Help Desk for help with setting up an Upload Area account. There should be only one registered analyst per state.

This module is available in the Short Term, Long Term, and Occupational Projections applications. The Notebook is not available in the Long Term Upload Area Connection module.

Screen Controls

- **Service URL** field
- **Email** field
- **Password** field
- **Connect** button

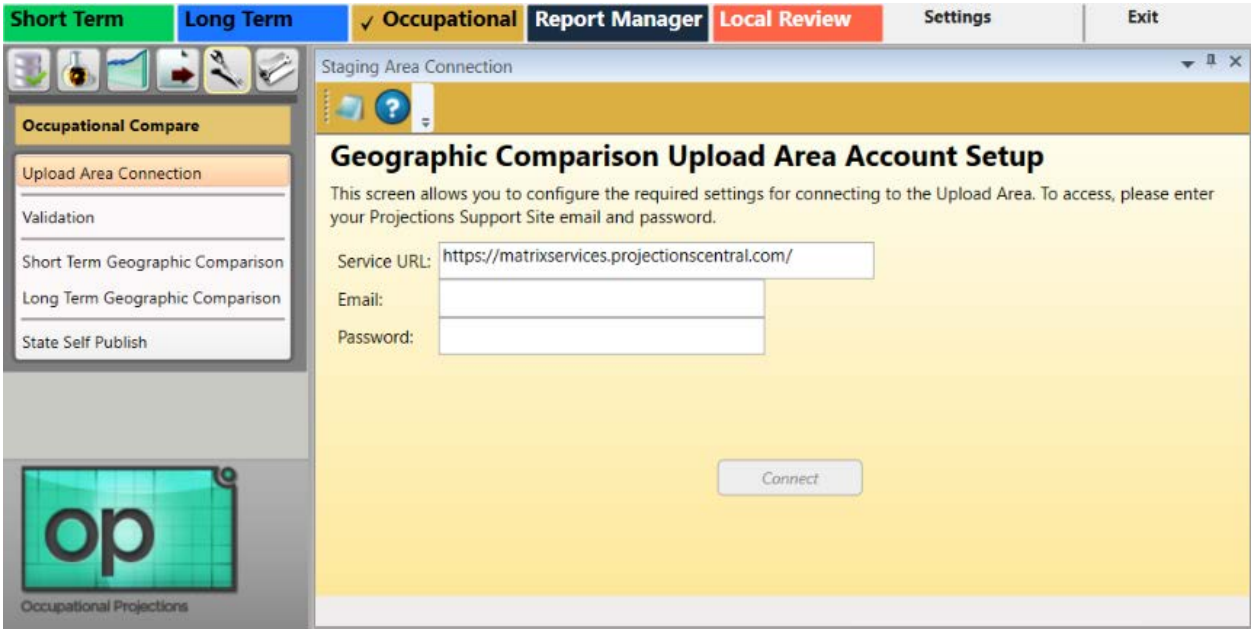


Figure 1: Upload Area Connection module

Login to Geographic Comparison Upload Area Account

1. Enter your **Projections Support Site email address** in the **Email** field.
2. Enter your **Projections Support Site password** in the **Password** field.
3. Click **Connect**. A Finished dialog box will be displayed if the connection is successful.

4. Click **OK** to return to the **Upload Area Connection** module.

☞If the connection is unsuccessful, the following message will be displayed:

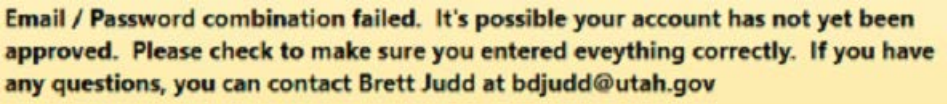


Figure 2: Connection failure dialog

5. Check your email address and password combination and try again. If multiple failures occur, contact the Utah Projections Help Desk for assistance.

Related Content

- Validation
- State Self Publish

Validation

Use the **Validation** module to validate and submit your **Employment and Training Administration (ETA)** deliverable data. Projections that were done using Projections Suite, Occupational Projections modules, or imported data can be validated and uploaded.

Screen Controls

- **Projection Suite Data** radio button
  - **State** drop-down menu
  - **Timeframe** drop-down menu
  - **Export To Upload Area** radio button
  - **Export To File** radio button
    - **File** field
    - **...** button
  - **Send ETA** button
- **Import File** radio button
  - **Select file to import** field
  - **Detected File Type** field
  - **Browse** button
  - **Import** button

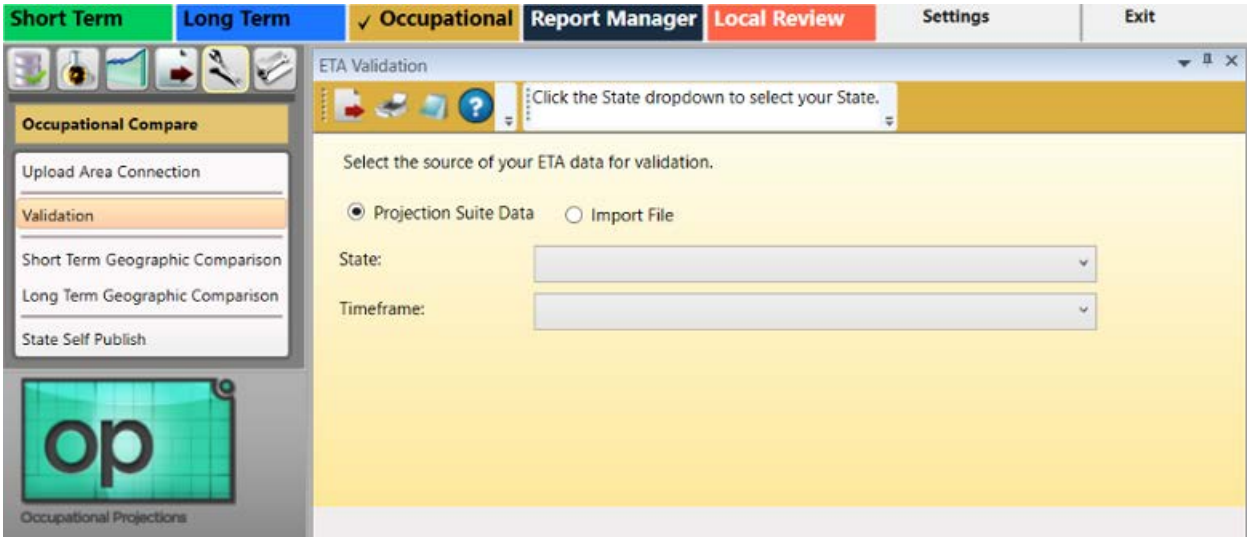


Figure 1: Validation module

ETA Data Source Selection

1. Select the source of your ETA data for validation. Select either the:
   - Projection Suite Data radio button

- Import File radio button

Validate ETA Data and Export to a File

1. Select the **Projection Suite Data** radio button.
2. Select a state from the **State** drop-down menu.
3. Select a **Timeframe** from the drop-down menu. If there are any errors, they will be displayed in the validation error box near the bottom of the screen (check the source of your data and try again). If there are no errors in the data, the message "Validation: Successful" will be displayed.

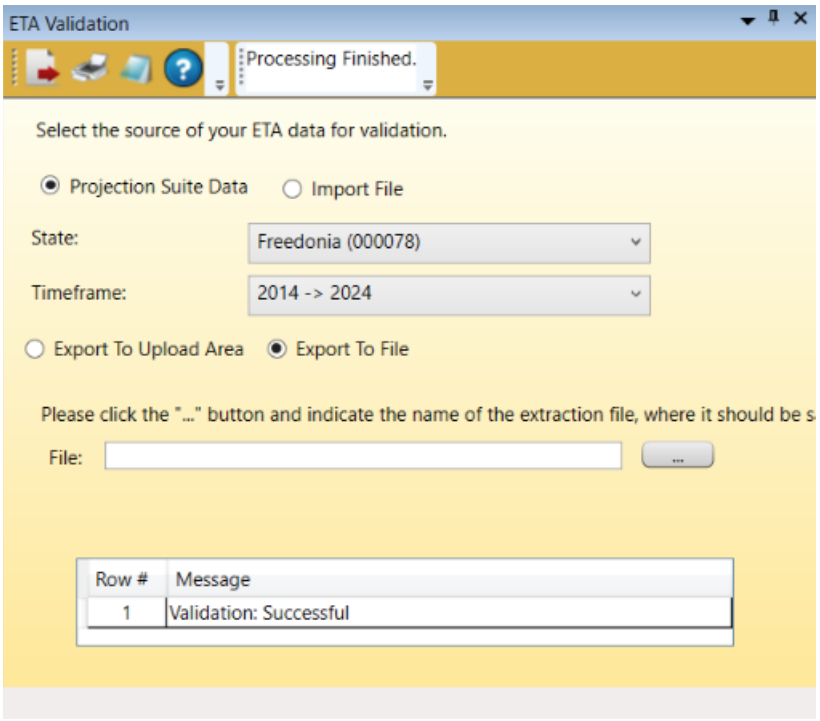


Figure 2: Export validated data to file

4. When the data displays, click the **Export to File** radio button.
5. Click the **...** button, then select the location to save the file to.
6. Click the **Export** icon on the tool bar. Export the file to correct any errors or make changes. When the file is exported, a **Finished Extract Data** message will be displayed.
7. Click **OK**.

☞Exporting data to a file is not a required step in validation, but is an available option if you require the data in an external file.

Export Validated ETA

1. Click **Export to Upload Area**.
2. Click **Send ETA**. When data is successfully submitted, a message will be displayed and a confirmation email will be sent.

Import a File for Upload

1. Click **Import File**.
2. Click **Browse** to **Select file to import**.
3. Select the file. Projections Suite will check the file type. If it is not a valid ETA format, or if the file still contains invalid data, an error will be displayed.
4. When the data displays, click **Import**.
5. Click **Export to Upload Area**.
6. Click **Send ETA**.

- If the data needs to be updated, use the **Validation** module again. The previous projections data is deleted and the new data is stored.

Non-Projections Suite Data

For **states that do not use Projections Suite** to do projections, their projections data can be sent to the Upload Area by using the Validation module and importing an Excel file. The columns needed in the file format can be viewed by visiting the Validation of Section of the ETA File Format topic.

Short Term Geographic Comparison

Use the **Short Term Geographic Comparison** module to create comparisons. You can create comparisons for:

- Compare to States
- Region Compare
- Workforce Compare
- Services Compare
- Goods Compare

Data is stored in the Upload Area for all states which have submitted data. Short Term Geographic Comparison requires data from at least three states.

The Short Term Geographic Comparison module is available in the Short Term and Occupational Projections applications. It is important to make the distinction: the Short Term Geographic Comparison module compares *industry* data; the Short Term Geographic Comparison module in the Occupational Compare group menu utilizes *occupational* data.

> ☞If you do not have an Upload Area account, an error message displays. You are unable to make comparisons until you have the account set up. Reference the Upload Area Connection module for information on creating an account.

Screen Controls

- **Select the base state** drop-down menu
- **Geographic Comparison** button
- **Compare to States** radio button
  - **Available States** table
  - **Selected States** table
- **Region Compare** radio button
- **Workforce Compare** radio button
- **Services Compare** radio button
- **Goods Compare** radio button
- **Available States** screen
- **Selected States** screen
- **Move** buttons

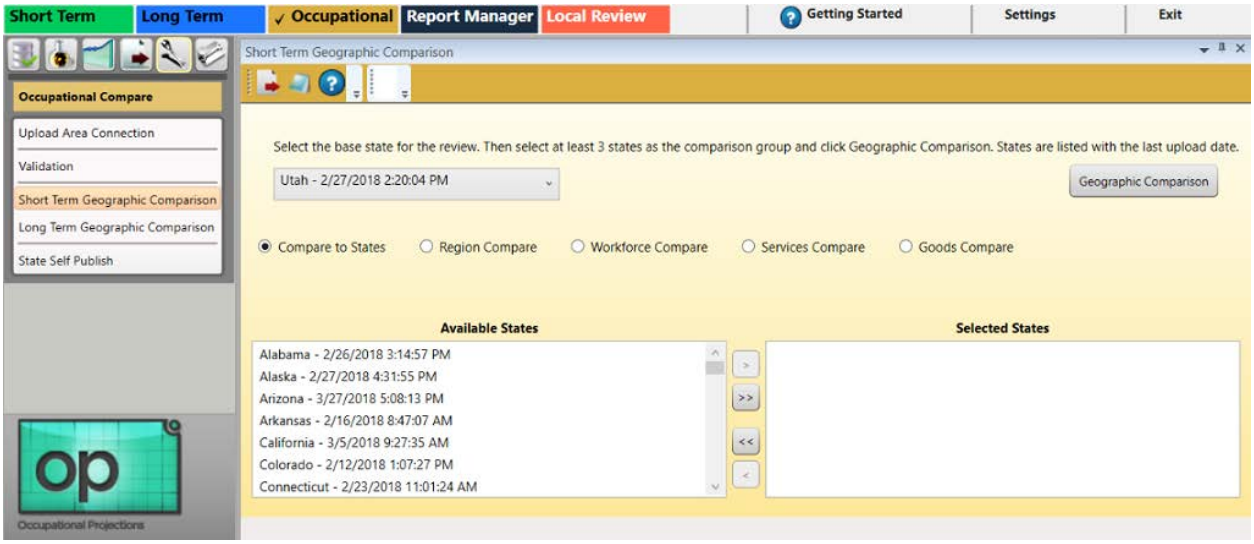


Figure 1: Short Term Geographic Comparison module

To generate comparisons from the Short Term Geographic Comparison module, select the type of comparison using the radio buttons. Submitted data includes the state name and submittal date and time. The date and time is used to ensure the compared data is the latest, most updated data.

Compare to States

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.
2. Select the states from the **Available States** box and move them to the **Selected States** box. Click the state, then click the arrow button. Or, click the double arrow button to move all **Available States** to the **Selected States** box.
3. Click **Geographic Comparison**. When the comparison is complete, a message displays.
4. Click **OK**.
5. Click the **Export** icon in the Active Module Toolbar.
6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Region Compare

1. Select the base State. The base state defaults to your state. You can select any state from the list as the base state for the comparison.
2. **Select the Region for the comparison**.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.

5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Workforce Compare

1. Select the base State.

2. **Select the Workforce Quartile for the comparison**.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.

5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Service Compare

1. Select the base State.

2. **Select the Services Quartile for the comparison**.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.

5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Goods Compare

1. Select the base State.

2. **Select the Goods Quartile for the comparison**.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.

5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Related Content

- Geographic Comparison File Format

Long Term Geographic Comparison

Use the **Long Term Geographic Comparison** module to compare geographic data. You can create comparisons for:

- Compare to States
- Region Compare
- Workforce Compare
- Services Compare
- Goods Compare
- Compare to Nation

Data is stored in the Upload Area for all states which have submitted data. Long Term Geographic Comparison requires data from at least three states.

This module is available in the Long Term and Occupational Projections applications. It is important to make the distinction: the Long Term Geographic Comparison module under the Long Term application compares *industry* data; the Long Term Geographic Comparison module in the Occupational Compare group menu utilizes *occupational* data. The Notebook is not available in the Long Term Upload module.

> ☞If you do not have an Upload Area account, an error message displays. You are unable to make comparisons until you have the account set up. Reference the Upload Area Connection module for information on creating an account.

Screen Controls

- **Select the base state** drop-down menu
- **Geographic Comparison** button
- **Compare to States** radio button
- **Region Compare** radio button
- **Workforce Compare** radio button
- **Services Compare** radio button
- **Goods Compare** radio button
- **Compare to Nation** radio button
- **Available States** screen
- **Selected States** screen
- **Move Right** button
- **Move Left** button
- **All Right** button
- **All Left** button

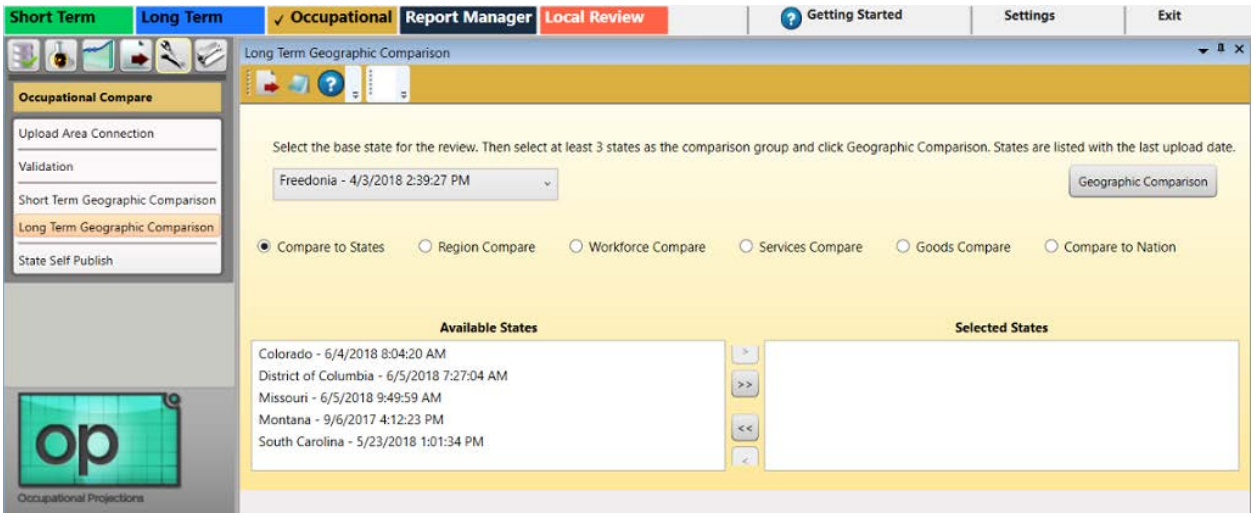


Figure 1: Long Term Geographic Comparison module

To generate comparisons from the Long Term Geographic Compare module, select the type of comparison using the radio buttons. Submitted data includes the state name and submittal date and time. The date and time is used to ensure data compared is the latest, most updated data.

Compare to States

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.
2. Select the states from the **Available States** box and move them to the **Selected States** box. Click the state then click the arrow button. Or, click the double arrow button to move all **Available States** to the **Selected States** box.
3. Click **Geographic Comparison**. When the comparison is complete, a message displays.
4. Click **OK**.
5. Click the **Export** icon in the Active Module Toolbar.
6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Region Compare

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.
2. **Select the Region for the comparison**.
3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click **OK**.
5. Click the **Export** icon in the Active Module Toolbar.
6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Workforce Compare

1. Select the base state.
2. **Select the Workforce Quartile for the comparison**.
3. Click **Geographic Comparison**. When the comparison is complete, a message displays.
4. Click **OK**.
5. Click the **Export** icon in the Active Module Toolbar.
6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Service Compare

1. Select the base state.
2. **Select the Services Quartile for the comparison**.
3. Click **Geographic Comparison**. When the comparison is complete, a message displays.
4. Click **OK**.
5. Click the **Export** icon in the Active Module Toolbar.
6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Goods Compare

1. Select the base state.
2. **Select the Goods Quartile for the comparison**.
3. Click **Geographic Comparison**. When the comparison is complete, a message displays.
4. Click **OK**.
5. Click the **Export** icon in the Active Module Toolbar.
6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Compare to Nation

1. Select the base state.
2. Click **Geographic Comparison**. When the comparison is complete, a message displays.
3. Click **OK**.
4. Click the **Export** icon in the Active Module Toolbar.
5. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

Related Content

- Geographic Comparison File Format

State Self Publish

The **State Self Publish** module enables publication of projections data to the public website. You must have a connection to the Upload Area to publish the projections. Reference the Upload Area Connection module for information on creating an account.

When the data is published successfully, a message displays and a confirmation email is sent. If the public website is not ready to accept data for the selected time frame, a **Can't Publish** message displays.

> ☞Data can be resent to the website. **Re-sending data will overwrite previously stored data with the new data**.

Screen Controls

- **Short Term Projections** radio button
- **Long Term Projections** radio button
- **Publish** button

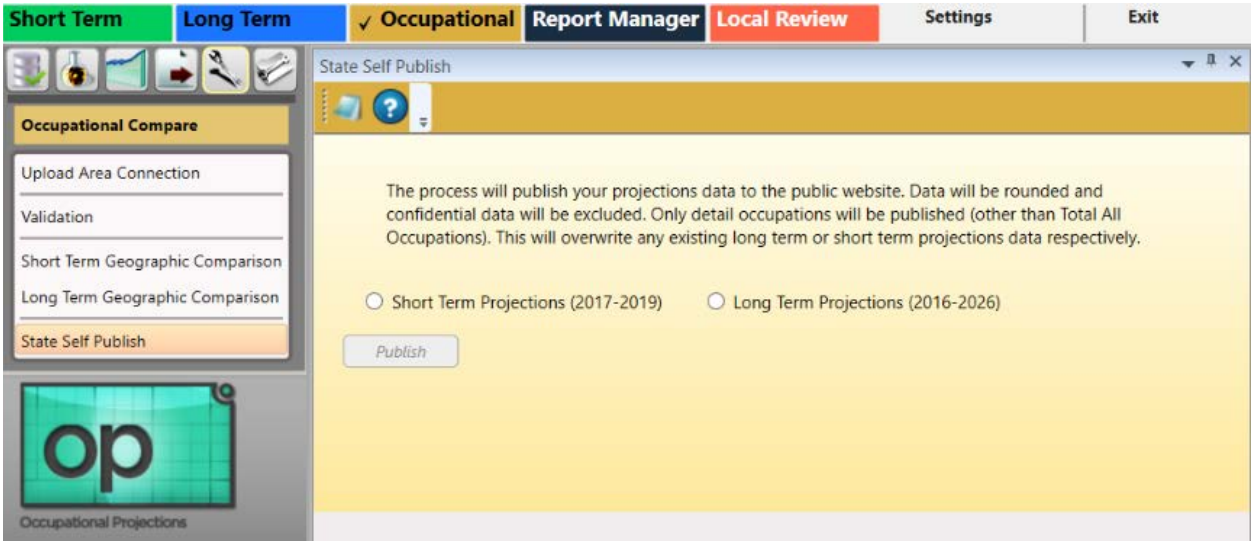


Figure 1: State Self Publish module

Publish Short Term Projections

1. Select the **Short Term Projections** radio button.
2. Click the **Publish** button.

Publish Long Term Projections

1. Select the **Long Term Projections** radio button.
2. Click the **Publish** button.

Occupational Utilities Menu Items

Occupational Utilities Introduction

Use the **Occupational Utilities** group menu to manage and export the notebook and perform miscellaneous administrative functions.

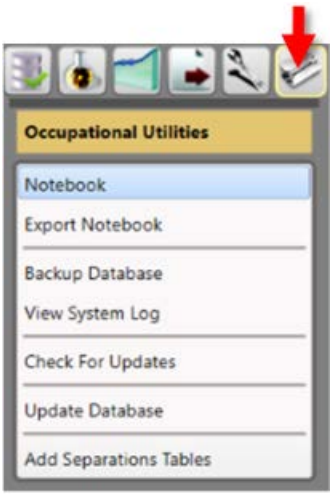


Figure 1: Occupational Utilities group menu

The Occupational Utilities group menu contains the following selections:

- Notebook
- Export Notebook
- Backup Database
- View System Log
- Check for Updates
- Update Database
- Add Separations Tables

Notebook

Use the **Notebook** module to record user and statistical notes for each area and time frame. The Notebook can be helpful during the analysis and projections process. It can also be used to keep historical records for industries, which can be helpful when state analysts leave and new analysts begin using the application.

You can access the Notebook in all but a few Short Term Industry and Occupational Projections modules. The Long Term application does not have access to the Notebook.

Screen Controls

- **Area** drop-down menu
- **Timeframe** drop-down menu
- **Save** button
- **Reload** button
- **Delete All Notes** button

Record or Modify Notes

1. Click the **Notebook** module from the group menu. The **Notebook screen** will be displayed in its own undocked window:

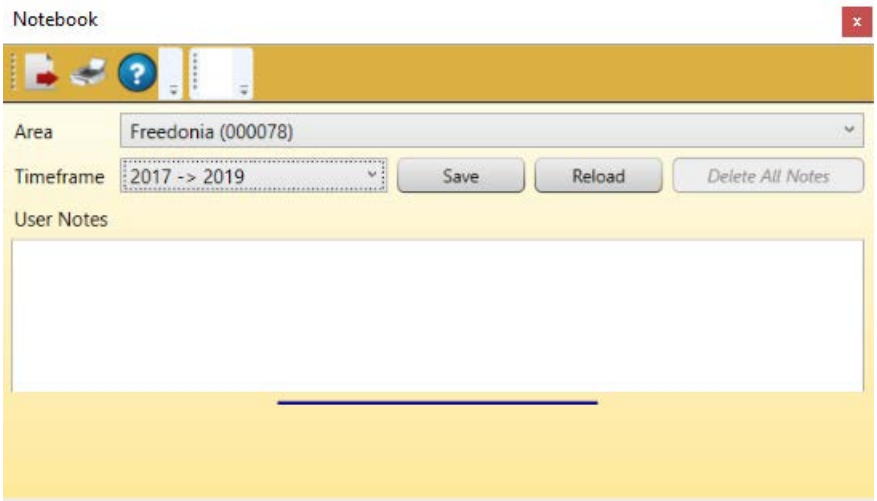


Figure 1: Notebook module

2. Select an area to record/modify notes about, with the **Area** drop-down menu.

3. Select a time frame to record/modify notes for, by clicking the **Timeframe** drop-down menu.
4. **Type the notes** for the selected area and time frame.
5. Click the **Save** button.

Export Notes

1. Click the **Export** button in the Active Module Toolbar. A **Save As** dialog box will be displayed.
2. Select a name and location for the notebook file to be exported to.
3. Click the **Save** button.

Printing the Notes

1. Click the **Print**  button in the Active Module Toolbar. The **Print Preview dialog box** will be displayed. The **Print Preview dialog box** contains seven icons to assist with the printing/confirmation process. From left to right, they are the:

- **Print**  icon used to send the notebook to the printer.
- **Zoom In**  and **Zoom Out**  icons are used to make the text larger and smaller.
- **View at 100%**  icon used to view the Notebook at 100% of its size.
- **View at Page Width**  icon used to view the notebook so it fills the width of the page.
- **View Whole Page**  icon used to view the entire Notebook page.
- **View Two Pages**  icon used to view two pages of the Notebook at the same time.

2. Click the **Print**  icon after making all of the needed entries and adjustments. The Notebook data will print.

Export Notebook

The **Export Notebook** menu enables the export of all notes for specific areas and export of *all* notebook data.

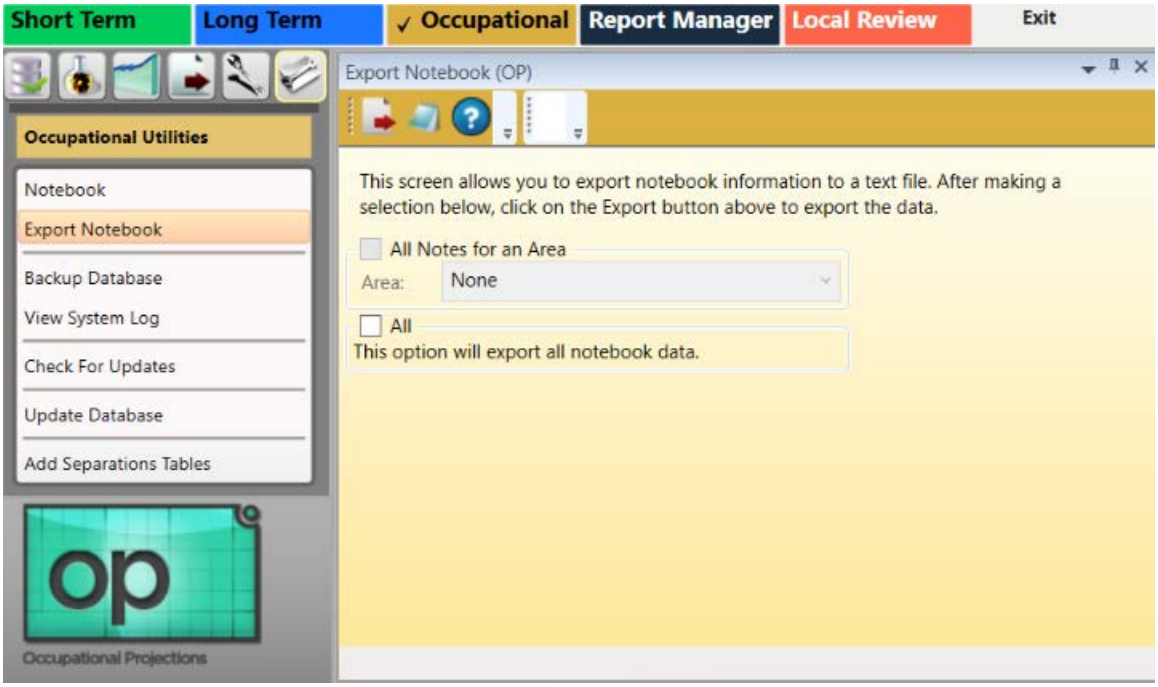


Figure 1: Export Notebook module

Export/Save All Notes from a Specific Area

1. Select the **All Notes for an Area** check box to save and export a single Area's notes.
2. Select an area for export from the **Area** drop-down menu.

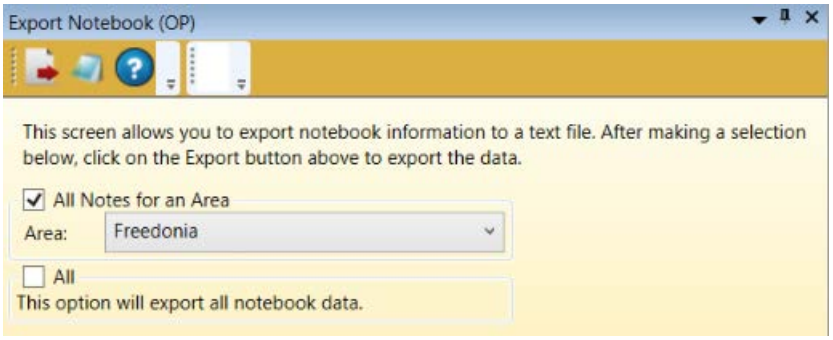


Figure 2: Export notes for an area

3. Click the **Export** icon in the Active Module Toolbar. A **Save As** dialog box will be displayed.
4. Navigate to the desired folder and enter a name for the file.
5. Click the **Save** button. This will save the notes for the designated area.

Save All Notes from All Areas and Time Frames

1. Click the **All** check box.

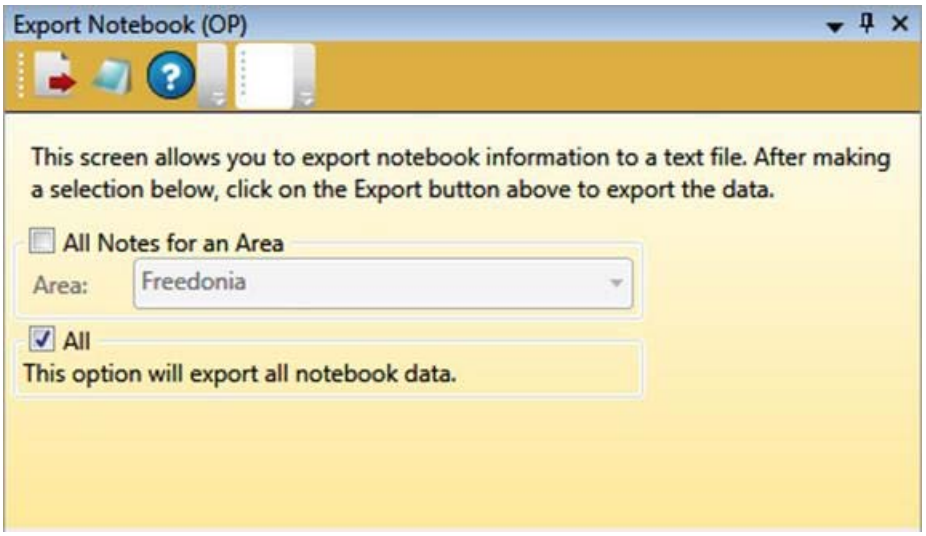


Figure 3: Exporting all notes from every Area and time frame

2. Click the **Export** button. A **Save As** dialog box will display.
3. Select a name and location for the exported file.
4. Click the **Save** button.

Backup Database

Use the **Backup Database** module to create a copy or archive the existing data in the database so the information can be restored if needed.

Backup Changes in the Database

1. Click the **Backup Database** menu choice from the **Occupational Utilities** group menu. The backup process will begin immediately. When the backup is complete, the following screen will be displayed:

Figure 1: Backup Database dialog box

2. Click **OK**.

☞If there is an issue with the backup process, a Backup error dialog displays. Read the error information and click **OK** to close the window. Correct any errors and select the Backup Database module to try again.

Set a Backup Location

If there is no backup directory selected in the DB Setup Tool, an error will be displayed. To select a backup folder:

1. Double-click the Projections Suite Database Tool icon on your desktop, or navigate to it through the Start menu.

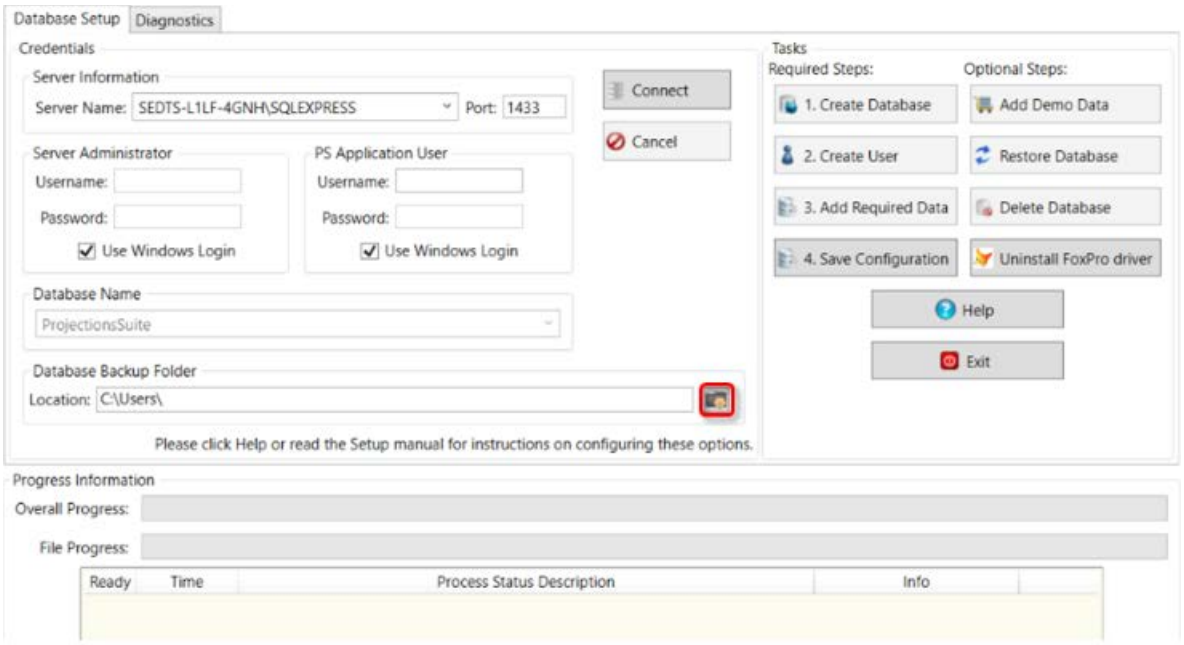


Figure 2: Projections Suite Database Tool, browse and select a database backup location highlighted

2. Click the **backup folder icon** in the DB Setup Tool.
3. Select a location for your database backup folder.
4. Click **OK**.
5. Click the (Step 4) **Save Configuration** button.
6. Exit the database tool.

Related Content

- Projections Suite Database Setup Tool

View System Log

The **View System Log** module is used in the event Projections Suite is not functioning properly. A copy of the System Log may be required to troubleshoot your Projections Suite environment. This module is available in Short Term, Long Term, and Occupational Projections.

View the System Log

1. Click the **View System Log** menu choice. Two dialog boxes will be displayed:
   - View System Log instructions dialog box, containing this message:

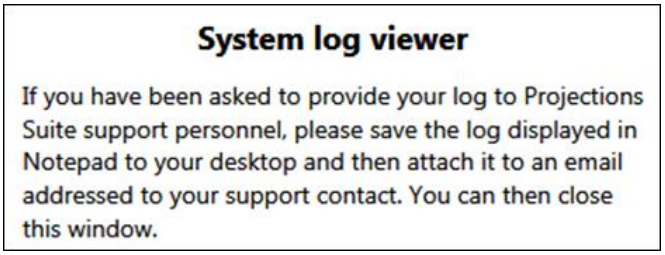


Figure 1: Instructions for sending the System Log to a support contact

   - Notepad log file containing the log information:

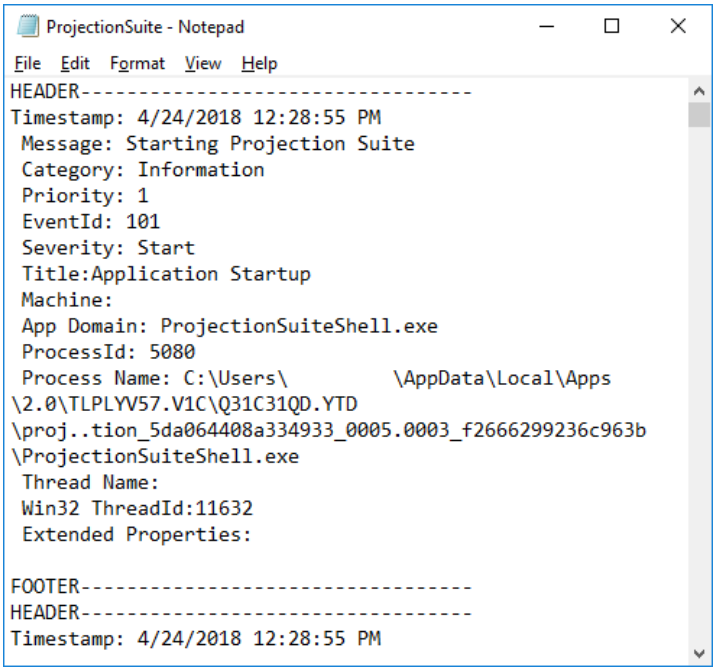


Figure 2: Projections Suite Log

Check for Updates

The **Check for Updates** module is available in Short Term, Long Term, and Occupational Projections. To check for updates to the Projections Suite application:

1. Select the **Check For Updates** option from the **Utilities** group menu.
2. Select the **Click here to check for updates** button. If the application is up to date, the following message will be displayed:

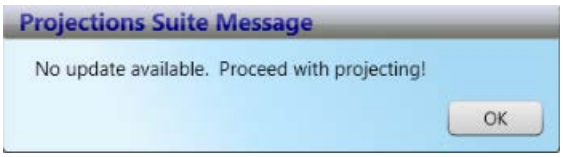


Figure 1: Projections Suite Message dialog box

Update Database

The **Update Database** module facilitates the updating of the Industry Directory, Occupational Directory, and National Data Files. To update the databases:

1. Select the **Update Database** menu option from the **Occupational Utilities** group menu. The Update Database module will be displayed:

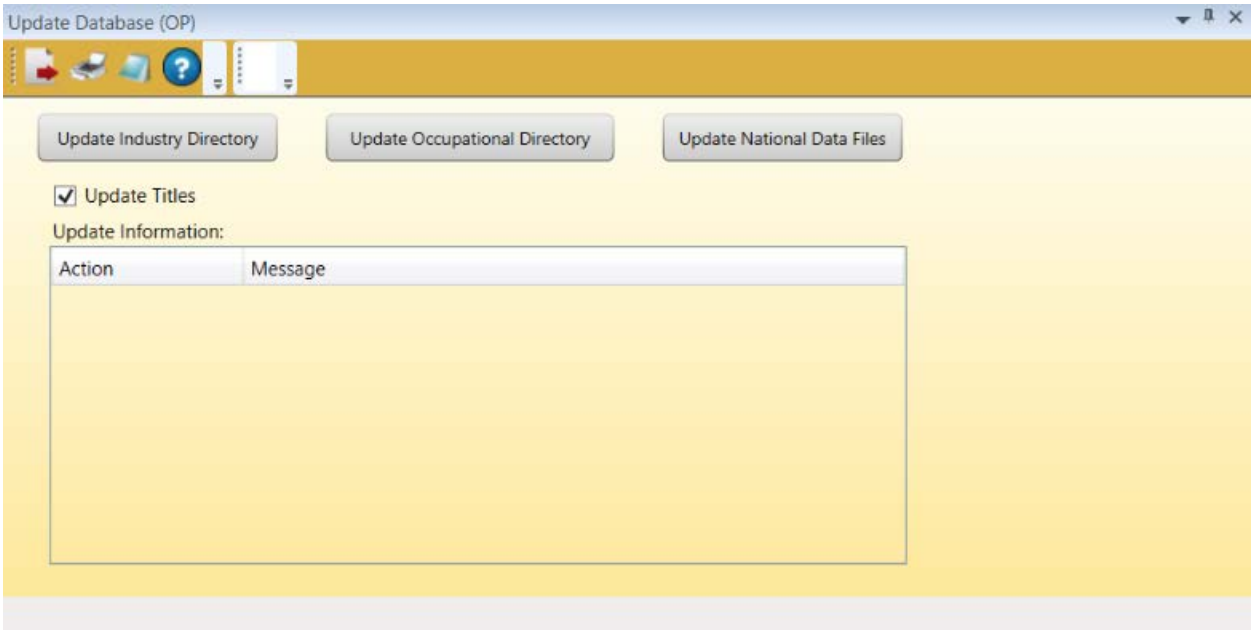


Figure 1: Update Database module

From here, select one of the following three options:

Update the Industry Directory

1. Select the **Update Industry Directory** button to update the directory. If there are no updates to complete, the following message will be displayed:

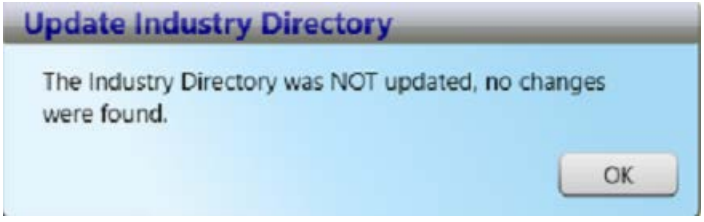


Figure 2: Update Industry Directory dialog box

Update the Occupational Directory

1. Select the **Update Occupational Directory** button to update the occupational directory. If there are no updates to complete, the following message will be displayed:

Figure 3: Update Occupation Directory dialog box

Update the National Data Files

1. Select the **Update National Data Files** button to update the national data files. When the process is complete, the following dialog box will be display:

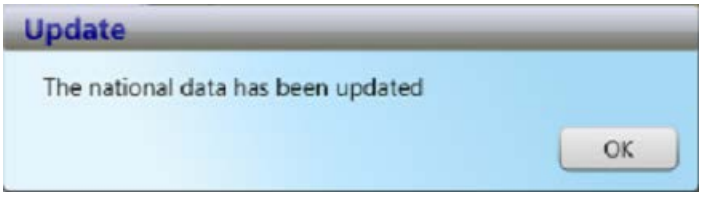


Figure 4: National Data Update dialog box

Add Separations Tables

The latest release of Projections Suite uses Separations instead of Replacements in the calculation of Openings in Occupational Projections. This requires that Separations Tables be added to your database.

If you participated in the Separations Testing, the tables will have already been added. If not, the tables can be added using one of the three methods listed below. Only one of these methods is needed to add the tables; all three methods are not required.

Adding the tables to the database requires administrative rights (or at least, rights sufficient to add the tables). Assistance from your IT staff may be required.

First Method to Add Separations Tables

1. Update the Database Setup Tool to the latest version if this has not already been done.
2. Open the **Projections Suite Database Tool** by double-clicking it on the desktop, or selecting it from the Windows Start menu.

Figure 1: Projections Suite Database Setup Tool icons

3. When the Database Tool is open, click the **Connect** button. This will enable the third step's (**Add Required Data**) button under **Tasks**, in the **Required Steps** column:

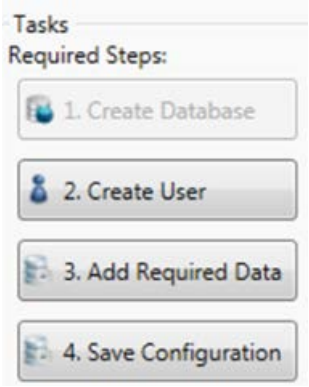


Figure 2: Required Steps in the Projections Suite Database Setup Tool

4. Select step **3. Add Required Data** and the tables will be added to the database. If the table creation is successful, the following message will be displayed in the **Progress Information** dialog box:

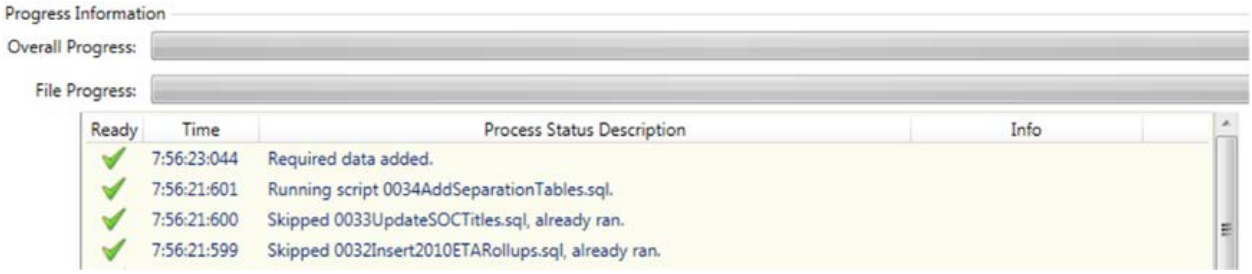


Figure 3: Progress Information output dialog

Second Method to Add Separations Tables

The Projections Suite application can be used to add the tables, if you have sufficient rights to create tables in the database. To accomplish this:

1. Navigate to the **Occupational Utilities**  group menu in Occupational Projections.
2. Select **Add Separations Tables**.

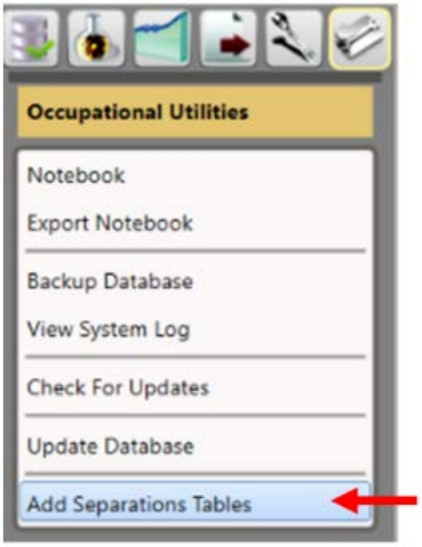


Figure 4: Add Separations Tables menu selection

3. Click the **Create Separations Table** button to create the tables. If this method was successful, a **Create** dialog box will be displayed.
4. Click **OK**.

Third Method to Add Separations Tables

If preferred, the Utah Projections Help Desk can send a SQL script file to run directly in SQL Server Management Studio. Again, administrative rights are required to complete this operation.

Contact bdjudd@utah.gov for more information.

Report Manager

Report Manager Introduction

Report Manager is an application that uses output files transferred from Projection Suite applications (STIP, LTIP, and OP) or files imported from external sources (LEWIS) to generate projections-related analyses and reports. Within Report Manager, you can create descriptors (e.g., high-growth industries and low-growth industries), indexes (e.g., hot jobs based on occupational projections and occupational wages), or skills-based employment projections (e.g., green and non-green skill employment demand).

The Report Manager documentation contains the following sections:

Getting Started with Report Manager

Report Manager enables you to quickly generate reports, including O*NET-based reports, using data from the Projections Suite, and the Local Employment and Wage Information System (LEWIS). This guide is designed to help get you started with Report Manager. For more information about transferring data into Report Manager from Projections Suite, please see the Transferring Data from Projections Suite to Report Manager section of this guide.

The Report Manager is divided into three main areas: **Reports**, **Browse Data**, and **Import Wages**. This guide will cover each of these sections.

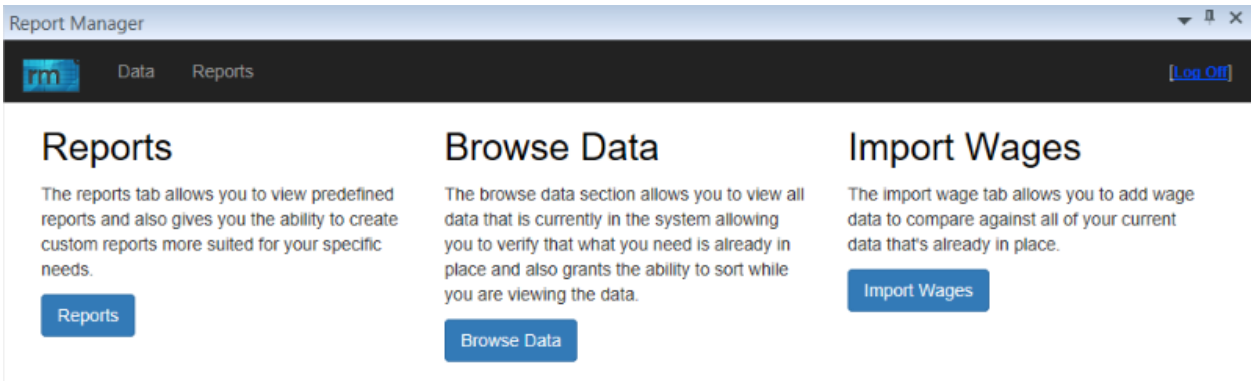


Figure 1: Report Manager's main menu

While the Report Manager menu is organized based on how frequently you will use items, this guide follows a sequence through the system designed to increase your overall familiarity with the functionality.

Accessing Report Manager

Report Manager can be accessed from within the Projections Suite by clicking on the Report Manager tab. You can also access Report Manager via an Internet browser (e.g., Internet Explorer, Chrome, etc.) by navigating to https://reportmanager.projectionscentral.com

Login Credentials

The Report Manager uses the same login credentials you use on the Projections Support web site. You may want to confirm that you have an account and remember your password by navigating to https://support.projectionscentral.com and logging into the system.

- If you do not have a Projections Support/Forum account, you can set one up at: https://support.projectionscentral.com/Register
- If you forgot your Projections Support account credentials, follow this link: https://support.projectionscentral.com/Password/Forgot

☞Please note, once you have logged in, the system will log you out after some time of inactivity.

Connect to Report Manager through Projections Suite

Report Manager is a web-based application, but it can also be ported into the Projections Suite application. It is helpful to be logged into the application via Projections Suite when exporting Occupational Projections.

Login to Report Manager through Projections Suite

1. Click on the Report Manager tab at the top of the window.

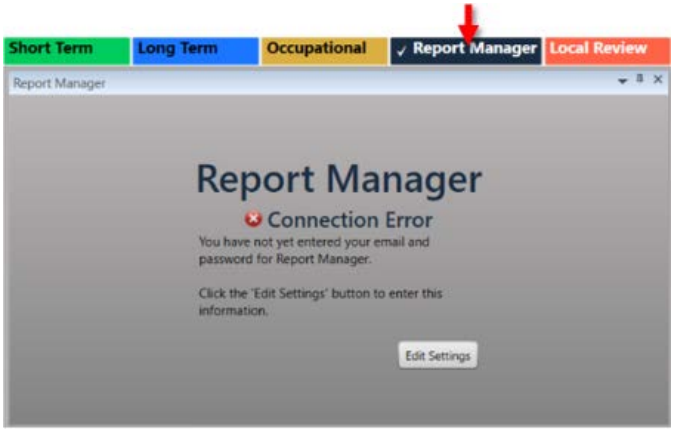


Figure 1: Click on the Report Manager tab

2. Click the **Edit Settings** button. The Report Manager Account setup screen will be displayed:

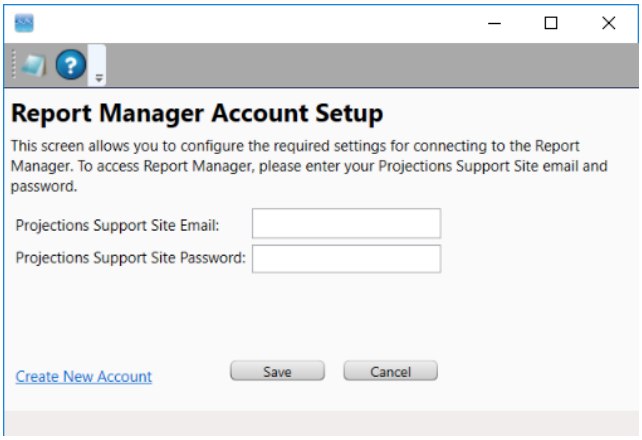


Figure 2: Report Manager Account setup screen

3. Enter your **Projections Support Site Email** address.
4. Enter your **Projections Support Site Password**.

☞If you need to sign up for a Projections account, click "Create New Account" on the Account Setup screen, or click here.

5. Click **Save**.
6. The **Finished** dialog box will be displayed. Click **OK**. You will be logged into Report Manager through the Projections application:

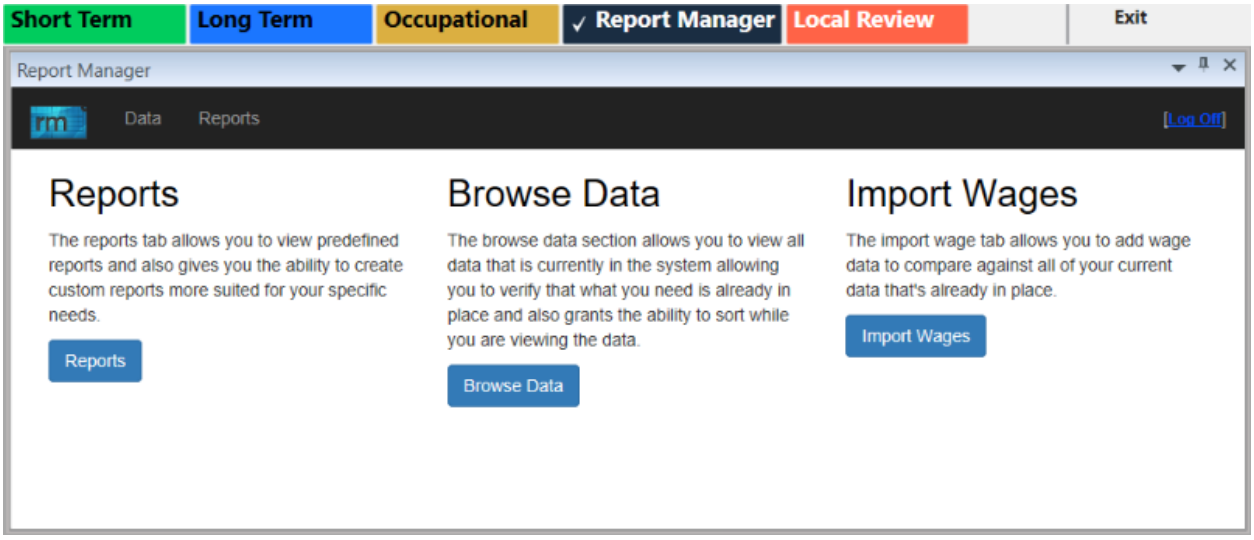


Figure 3: Logged into Report Manager through the Projections application

Trouble Logging In

If a login attempt fails, the following message will be displayed:

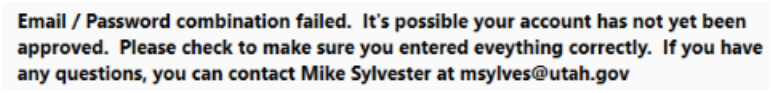


Figure 4: Connection failure dialog

If repeated login attempts fail, contact the Projections Help Desk.

If you have forgotten your login credentials, click here.

Browse Data

The Browse Data section allows you to view the data series transferred to Report Manager from the Projections Suite or imported from a LEWIS file. The data in this section are organized into four categories:

- **Occupation Projections -** Data transferred from the Occupational Projections section of the Projections Suite.
- **Industry Projections -** Data transferred from both the Long Term Industry Projections (LTIP) and Short Term Industry Projections (STIP) sections of the Projections Suite.
- **Wages -** Data imported from a LEWIS file.
- **Unmatched Projections -** Occupation-based data that has been transferred from the Projections Suite, but does not match an O*NET SOC code. Consequently, this data will be ignored when producing any O*NET-based report.

View the Individual Records in a Data Series

1. Select the **Browse** menu option or the **Browse Data** button. This will launch a window displaying the underlying records:

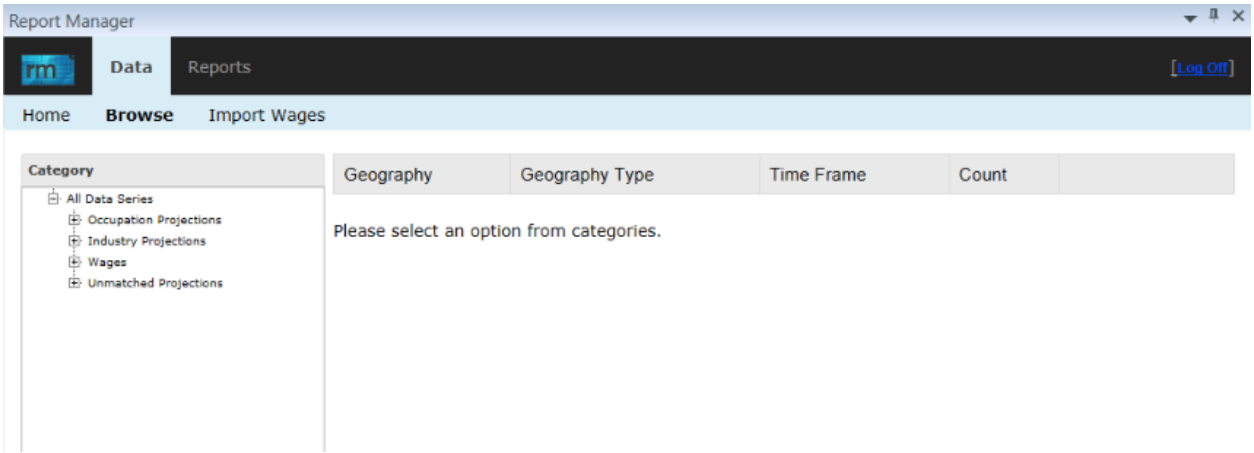


Figure 1: Browse Data screen

2. To view data, expand one of the categories on the left of the screen (by clicking on a plus **[+]** symbol) and select a data series.

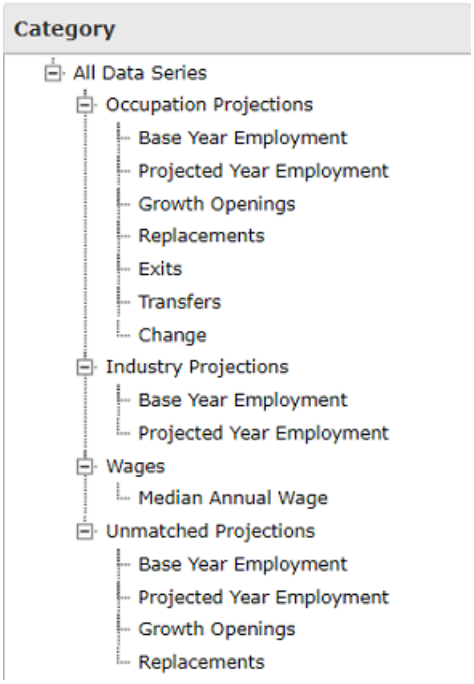


Figure 2: Browse Data Categories expanded

3. Upon selecting a data series, a summary of the data available will appear in a window to the right.

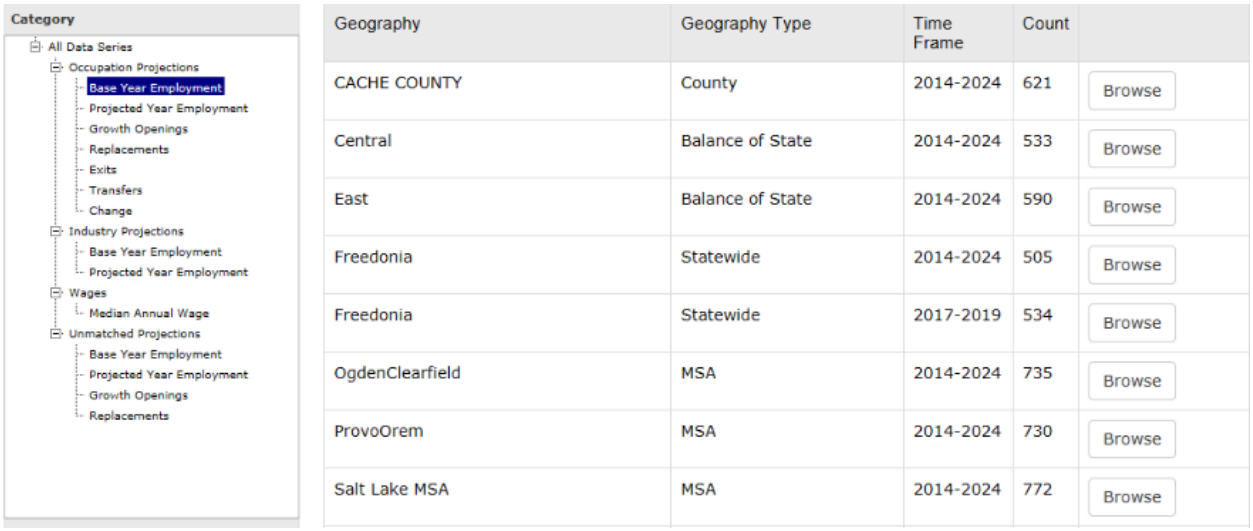


Figure 3: Base Year Employment data series selected, summary of data displayed

4. Click on the data series' associated **Browse** button to view the data series:

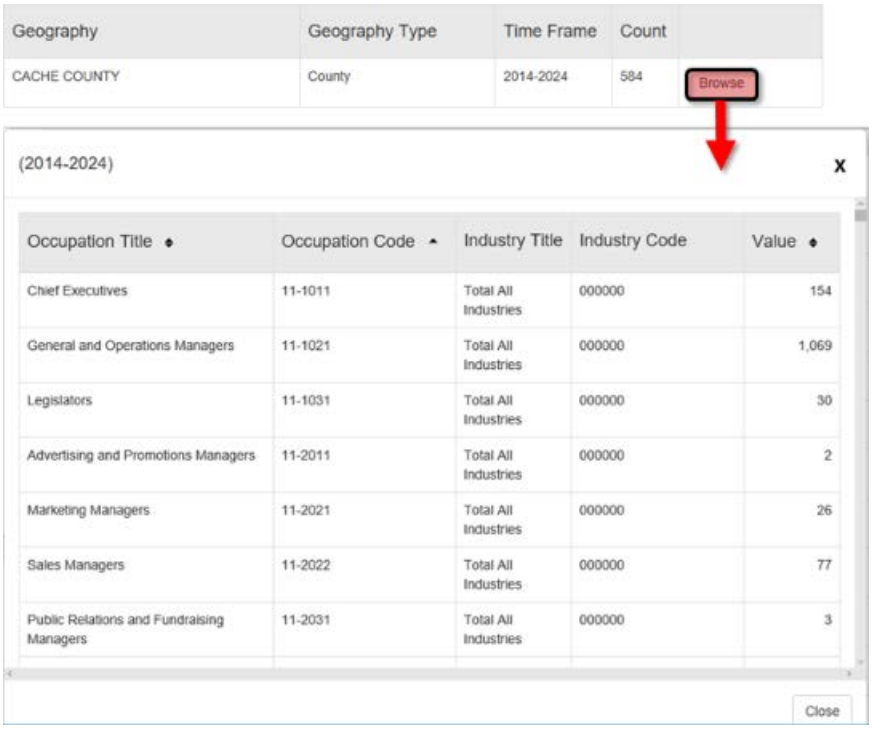


Figure 4: Clicking the Browse button will open the data series

When viewing the individual records, you can sort the data by the title, code, or data series value.

Sort Data

Report Manager utilizes the sorting features throughout the system. When a column is sorted, the system presents the ▲ icon when it is sorted in ascending order and the ▼ icon when it is sorted in descending order.

When a column is sortable (but not sorted), the system displays the ▲▼ icon. Clicking on the ▲▼ icon once will sort the column in ascending order. Clicking on the ▲ icon will sort the column in descending order. Clicking on the ▼ icon will change the sort back to ascending order. You can only sort by one column at a time.

Import Wages

Importing wages into Report Manager is not required, but it does enhance the reporting options available in the system.

Create the Import File from LEWIS

To import wages, you will need to access the LEWIS system or coordinate with the LEWIS user in your state. Then, follow the steps below:

1. **Be sure you have transferred occupation projections into Report Manager before importing wages.**
2. In the LEWIS system, select the estimate type you would like to export (e.g., State of Ohio), right click, and select "Select for Export."
3. In the export options, select "LEWIS (EDS) wage table" and then choose the file format option of a pipe delimited text file (Report Manager only accepts pipe delimited | text files).
4. Export the file and locate it in the "edspub" folder.

Import LEWIS Files into Report Manager

Once you have the file from LEWIS, follow these steps to import your data into Report Manager:

1. Within Report Manager select the **Import Wages** button from the top menu.
2. Click Browse. Choose the saved LEWIS file when prompted.
3. Choose the time frames (from the Occupational Projections you transferred) that you want associated with these wages. Only the time frames from the occupation projections you transferred into Report Manager are shown.

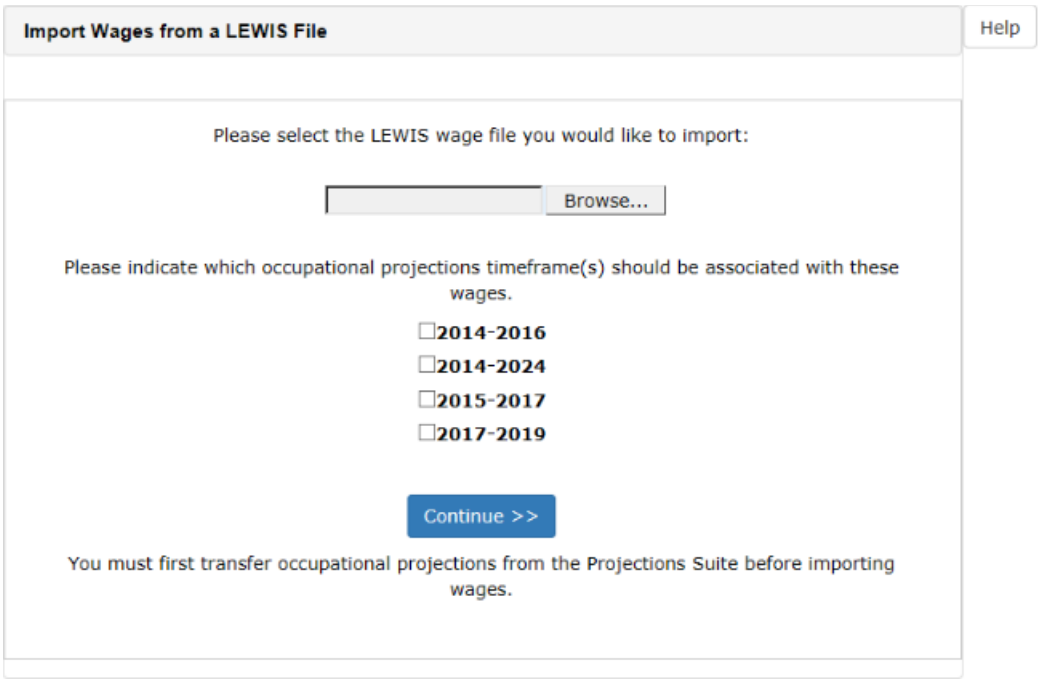


Figure 1: File and time frame selection

4. Click **Continue>>**.

5. Since the Projections Suite and LEWIS may use different area codes and area type codes for a geographic area, it is necessary to match Projections Suite codes with those of the LEWIS file you are importing. To match codes, select the corresponding area from the drop-down on the right. If you do not want to import a particular area from the LEWIS file, select "<< Ignore >>". Report Manager will remember these matches for future imports.

6. Click **Submit** to import the wage file. If successful, you will be told how many records were imported. If unsuccessful, please contact the Utah staff.

☞Click the **Help** button in the top right corner of the screen to access information on preparing the extract file from LEWIS for importation.

Generate Reports

The core functionality of the Report Manager is to generate reports. To access this function, click on the **Reports** link on the top menu. The Reports Dashboard will be displayed:

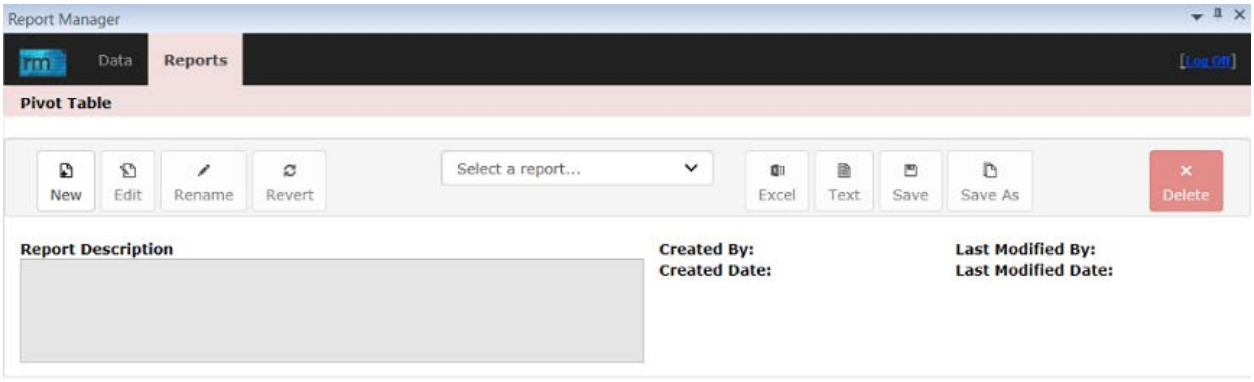


Figure 1: Reports Dashboard

Predefined Reports

Report Manager has pre-loaded several reports for you, referred to as "Predefined" Reports. These reports are contained in the drop-down labeled "**Select a report…**" You can create and save your own predefined reports, and they will be found in this drop-down list as well.

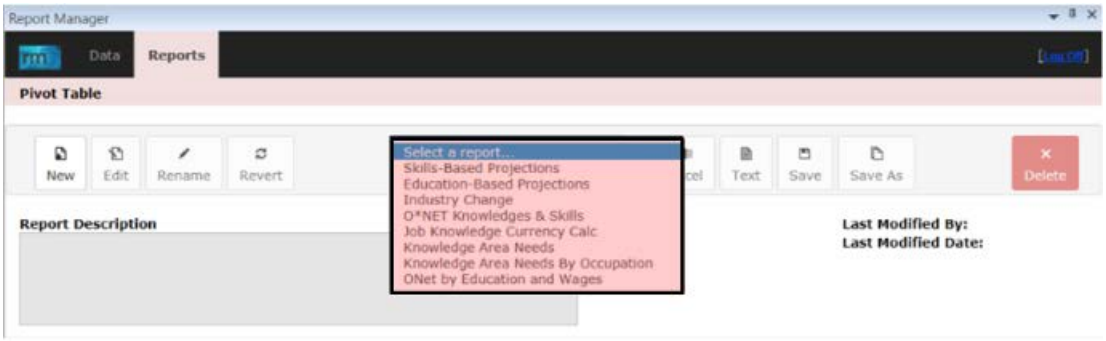


Figure 2: Select a Report drop-down menu

When you select a report, the system will automatically generate that report based on your data. You can sort the columns of this report by clicking on the arrows of a particular column. See the **Sorting Data** sub-section of the Browse Data section for more information on sorting.

Export Reports

You also have the option of exporting an Excel (.xlsx) or text (.txt) formatted report. To do so:

1. Click on the **Excel** or **Text** button:

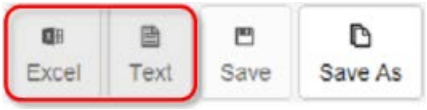


Figure 3: Excel or Text format export options

2. A window will appear to prompt you to name the file. After entering the name, click **Save** to finish the export.

Figure 4: Export Report dialog box

Saving Reports

You cannot save a predefined report, but you can save a copy by clicking on the **Save As** button. This creates a copy you can further customize.

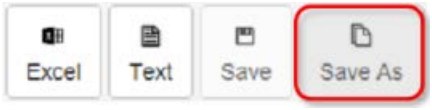


Figure 5: Save As button

You can also customize reports by clicking on the **Edit** button. Clicking the **Edit** button will open the **Edit Report** menu options (see Figure 6). Once you have customized a report by changing the default settings, you can **Save** that report (using the existing name) or use **Save As** to give the report a different name.

Edit Reports

To change the columns, rows or data series selected, or to filter particular data or apply suppression, click on the **Edit** button in the top navigation bar.

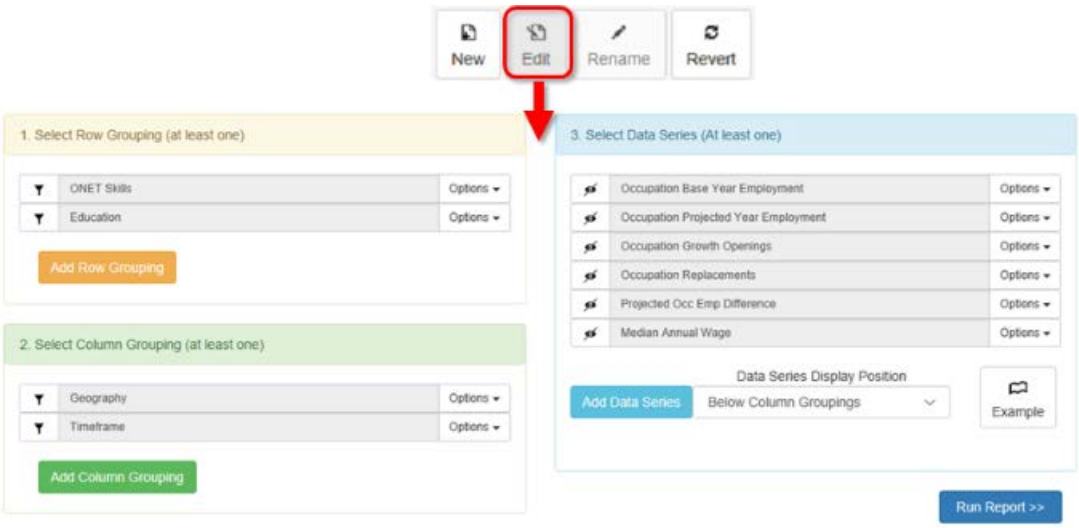


Figure 6: Open Edit Report menu options

To add or change the rows or columns of a report, click on the **Add Row Grouping** or **Add Column Grouping** buttons. You can have a maximum of two row or column groupings.

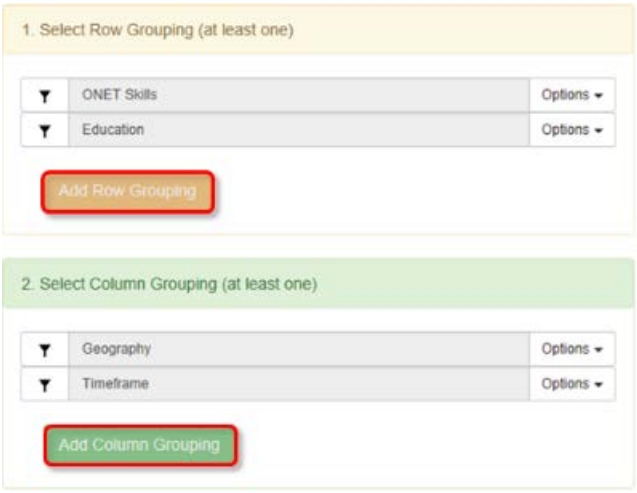


Figure 7: Add Row Grouping, Add Column Grouping

If you are already using two groupings and want to change the groupings, you must first select the **Options** drop-down and select **Delete** to remove the unwanted grouping.

Figure 8: Delete unwanted grouping

To filter data, click on the **Filter** button to the left of either a column or row grouping. To remove a filter, click on a selected item.

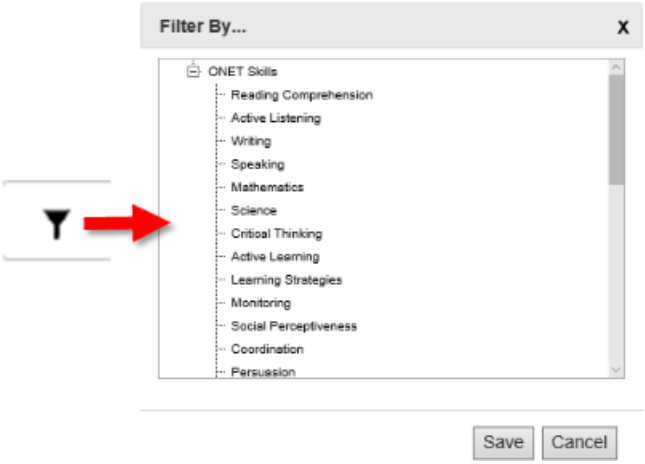


Figure 9: Open Filter By options

If you would like to reorder the data series or the row or column groupings, click on the **Options** button and select **Move Up** or **Move Down**.

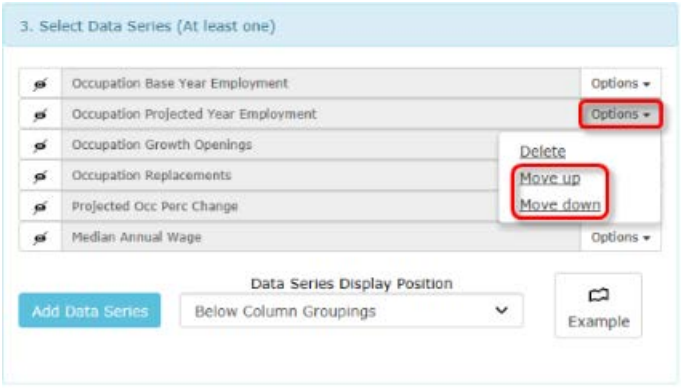


Figure 10: Move down or Move up

To see how the reports are structured, click the **Example** button which will show you a sample layout of the report.

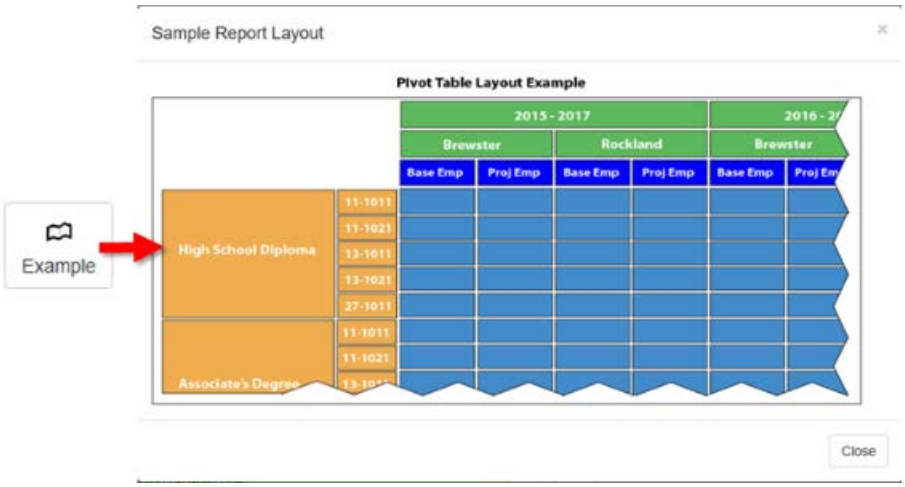


Figure 11: Example report layout

Data Suppression

If you would like to mask values that fall under a certain threshold, click the **suppression button** located to the left of each of the selected data series. Enter the threshold you want to use as the basis for suppression.

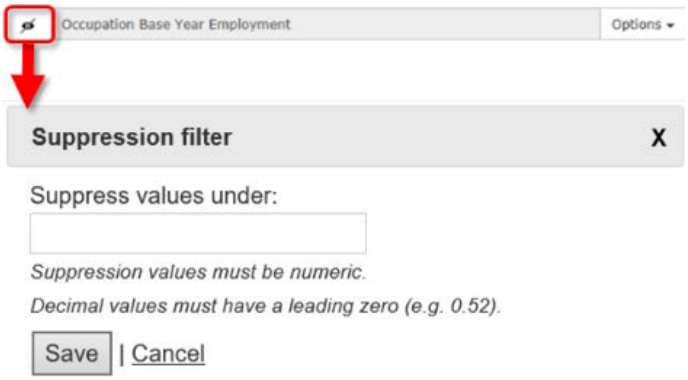


Figure 12: Open Suppression filter

When a suppression value is selected, the suppression icon will be darkened, indicating the value is suppressed:

Figure 13: Value suppressed

Any value less than that threshold will not be displayed. To remove this suppression, click the **Remove Suppression** button. You can have different levels of suppression for different data series.

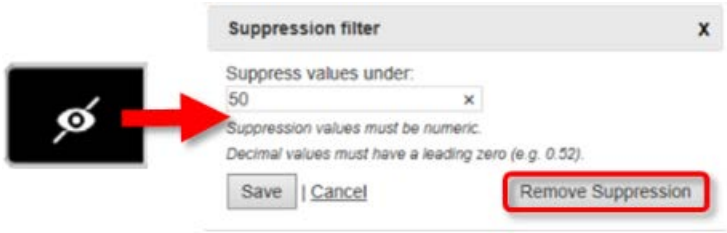


Figure 14: Remove Suppression

Reordering the Data Series in Reports

By default, the data series is the inner-most column grouping. In some situations, you may want the data series grouped at a different level. To change this grouping, select the desired option in the **Position** drop-down located at the bottom of the **Select Data Series** section.

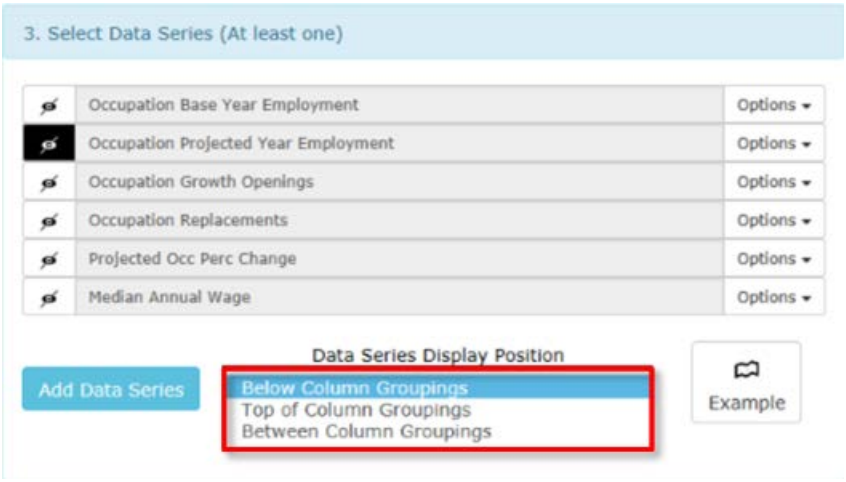


Figure 15: Data Series Display Position

New Reports

If you would like to start a new report from scratch, click the **New** button.

Figure 16: New button

This clears all values and lets you select the elements you would like. You can save these selections by clicking **Save** and naming the report.

Reverting Changes

If you would like to revert your changes to the last saved values, click the **Revert** button. Please note, any changes you have made to the last saved values will be lost.

Figure 17: Revert button

Transfer Data from Projections Suite to Report Manager

You will need to transfer projections data from Projections Suite before creating reports with projections data. Both industry and occupational projections can be transferred.

Transfer Occupational Projections

1. Open Projections Suite and navigate to the **Occupational** menu and select the **Output** group menu (you can also hit F9).
2. Select **Export Occupational Projections**.
3. On the screen that appears, select the geographic area and projections time frame you would like to transfer into Report Manager. If you would like to select all the areas, select the "All" area at the top of the list.

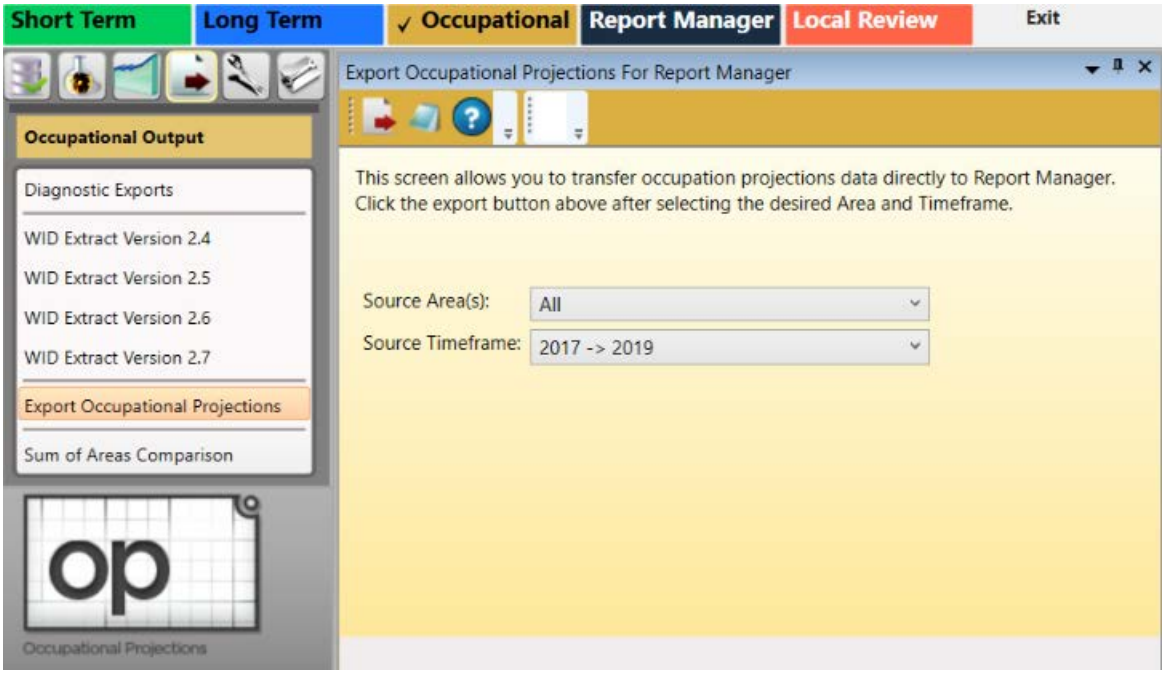


Figure 1: Exporting Occupational Projections into Report Manager

4. When you have made your selection, click the **Export** button on the toolbar above (the button will have a red arrow).
5. A notification window will pop up when the transfer has successfully completed. Please contact the Utah staff if you do not receive a success message.

6. Repeat this process for as many areas/time frames as you would like to use within the Report Manager.

Transfer Industry Projections

1. Open the Projections Suite and navigate to the **Short Term** or **Long Term** menu. Select the **Output** submenu (you can also hit F9).

2. Select **Export Industry Projections**.

3. On the screen that appears, select the geographic area and projections time frame you would like to transfer into Report Manager.

4. Select the **Source Area(s)** you would like to transfer to Report Manager. If you would like to select all the areas, select the "All" areas at the top of the list.

5. Click the **Transfer Data to Report Manager** radio button.

6. When you have made your selection, click the **Export** button on the Active Module Toolbar above (the button will have a red arrow).

7. A notification window will pop up when the transfer has successfully completed. Please contact the Utah staff if you do not receive a success message.

8. Repeat this process for as many areas as you would like to use within the Report Manager.

Access Data Exported to Report Manager

To access your exported data, reference the Browse Data section.

Local Review

Local Review Introduction

Local Review is used by state industry Projections analysts to obtain information about economic activity from local area experts, and recommend modifications to projected industry employment. Access Local Review in your preferred browser.

To access Local Review as a state analyst administrator, you will need to have an account set up. Contact Mike Sylvester (msylves@utah.gov) with the Utah Projections Help Desk for assistance.

State analysts with administrator rights will have menu items and screens available to them that reviewers will not see. Reviewers will only see the detail and summary views.

Local Review Menu

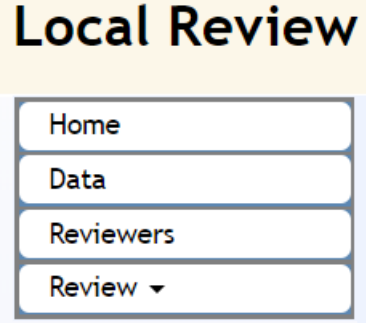


Figure 1: Local Review Home menu

Home

Clicking the **Home** menu selection from anywhere in the Local Review application will take you back to the Home page. The Home page contains the following information about the menu selections:

Data

The Data menu item is used by state analysts to add and delete industry employment series and projections data for review by local experts. To ensure correct data formatting, obtain data from the Projection Suite output options: Export Industry Projections / Export to Data File - Local Review Format.

Reviewers

The Reviewers menu item is used by state analysts to add and delete local area reviewers of projections. Only analysts and administrators can add new reviewers, and reviewers will not be able to login until the state administrator adds them as a reviewer. Before reviewers are able to login and evaluate projections, the state analyst with administrator rights should do the following steps:

- **Step 1 -** Import Projections data.
- **Step 2 -** Add a new Reviewer.
- **Step 3 -** Notify the Reviewer to sign up on the site.
- **Step 4 -** After the Reviewer signs up, assign areas to the Reviewer.
- **Step 5 -** Reviewer can log in to review data.

Review

The Review menu item allows state analysts to:

- View a Summary of all industry projections in an area with statistics.
- Review graphical detailed industry projection modifications by Reviewers.
- Display a Reviewer Summary to select detail by Reviewer.

Edit Profile

To edit your user profile, click the **Edit Profile** link in the top right corner of the screen. This allows you to modify your first name, last name, email address, phone number, and include user notes.

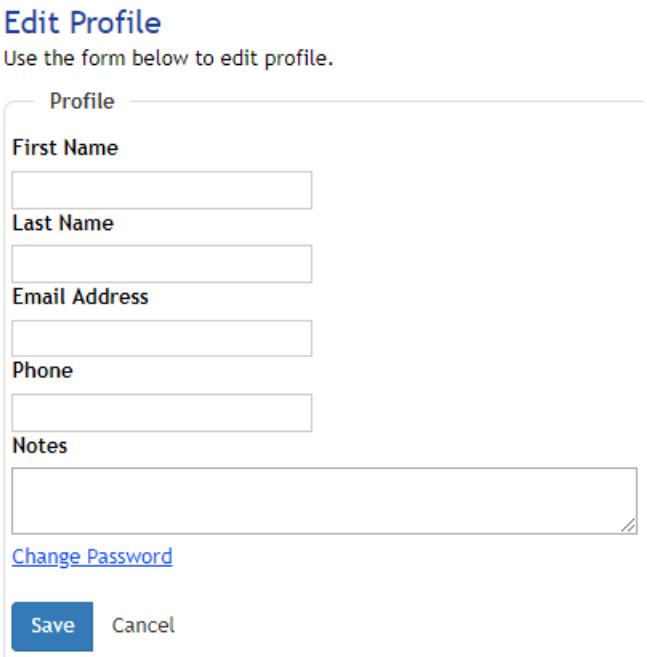


Figure 2: Edit Profile screen

After updating your information, click the **Save** button to save the changes. Click the **Cancel** button to discard any changes.

To change your password, click the **Change Password** link below the notes field. A Change Password window will be displayed.

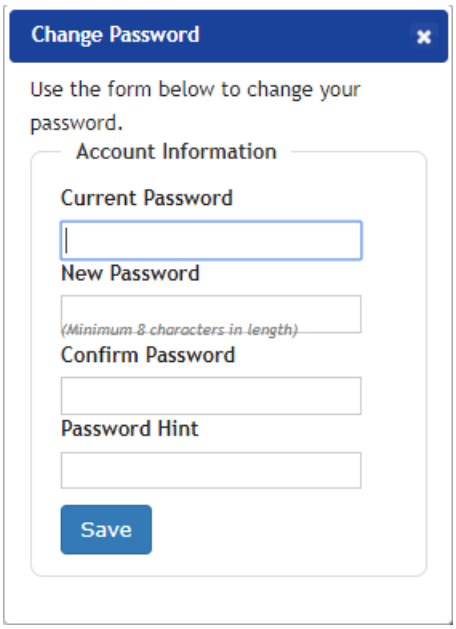


Figure 3: Change Password window

Update your account information and click the **Save** button. Click the **X** in the top right corner to cancel the change password process.

Local Review Data

The **Data** menu item contains a list of all available projections, by area and time frame.

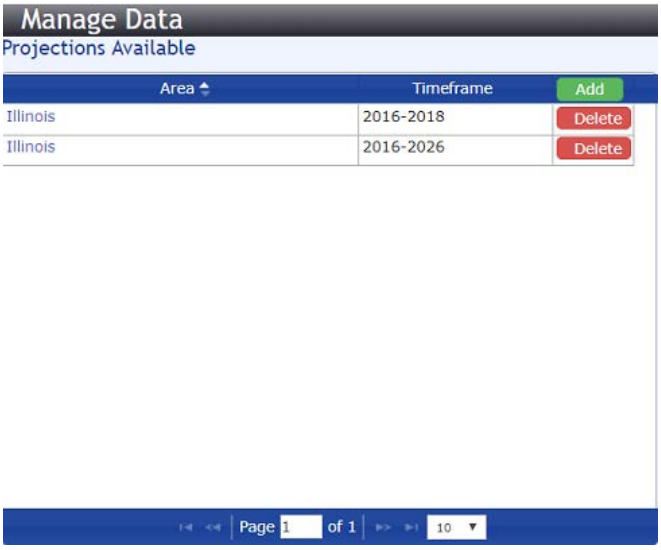


Figure 1: Manage Data section of the Data menu

To add data to the repository, click the **Add** button. An **Add Data** window will be displayed:

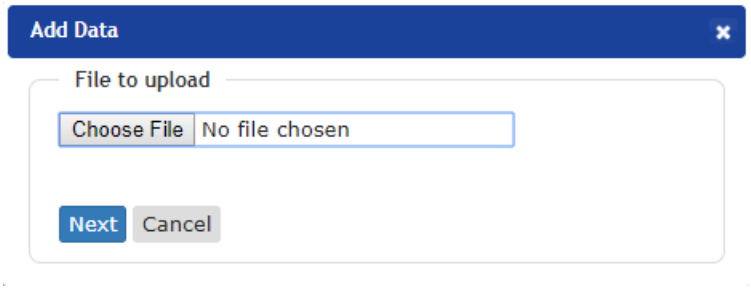


Figure 2: Add Data window

Click the **Choose File** button and select a file for upload. Click the **Next** button to proceed with the upload. Click the **Cancel** button to cancel the upload.

To delete data from the Manage Data screen, click the **Delete** button next to the data set.

View Projections

By selecting one of the available sets of projections from the list, you will be taken to the **Summary** screen.

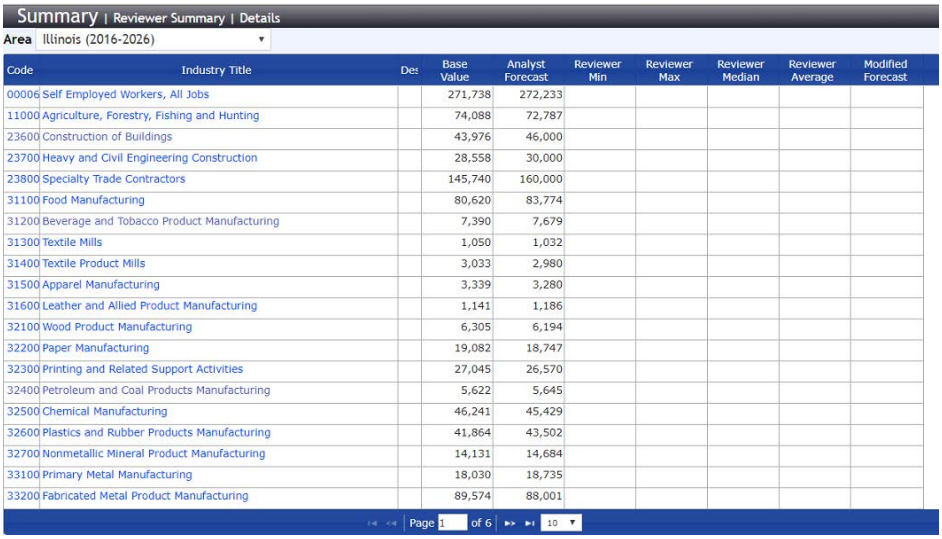


Figure 3: Summary screen

Click the arrow buttons or use the drop-down menu to review the listed projections. To view the associated projections, click on its associated NAICS code or Industry Title. Clicking on one of the links will take you to its Details screen.

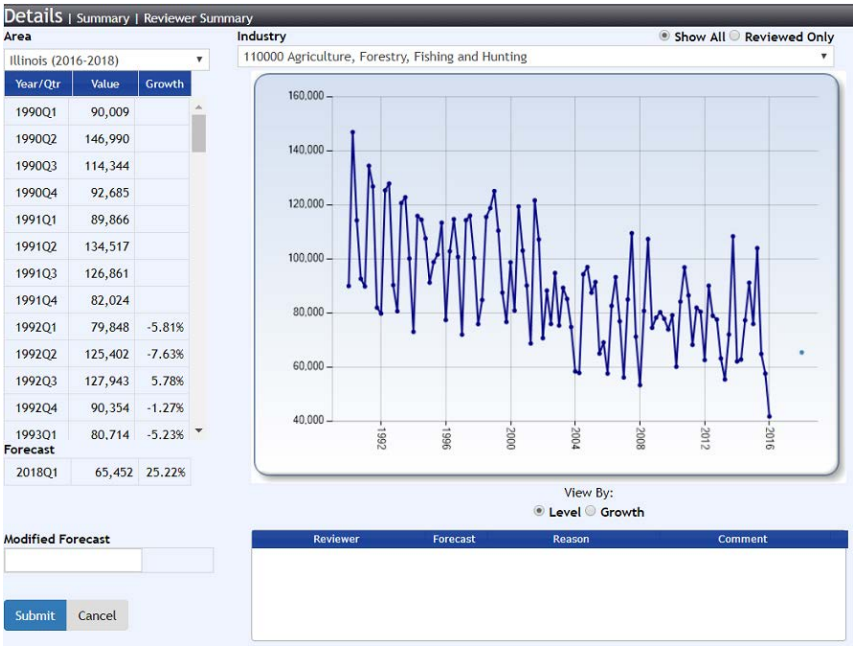


Figure 4: Details screen

The data grid on the left of the Details screen displays the Year/Quarter, the employment value, and the growth percentage. You can change the graph to view the data by employment level or by percent growth.

Local Review - Reviewers

The **Reviewers** option displays a list of available Reviewers. It also enables the adding and deletion of Reviewers.

Figure 1: Manage Reviewers screen

Clicking on a Reviewer's name navigates to the Reviewer Details screen where the Reviewer's contact information and profile details will be displayed.

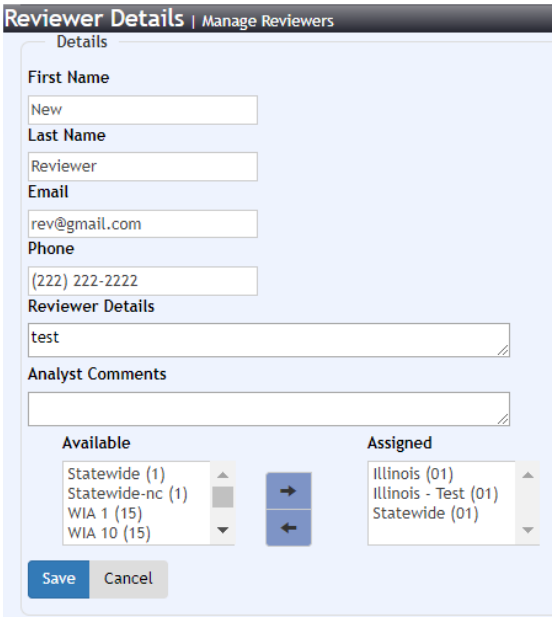


Figure 2: Reviewer Details screen

Use the left and right arrows to move **Available** areas to the **Assigned** areas category.

Click **Save** to save changes to the Reviewer record. Click **Cancel** to return to the Manage Reviewers screen.

Local Review - Review

The **Review** section has three options, accessed by hovering your mouse over the Review category.

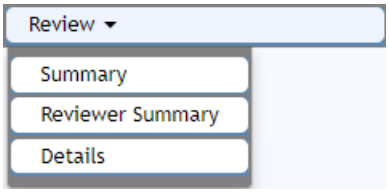
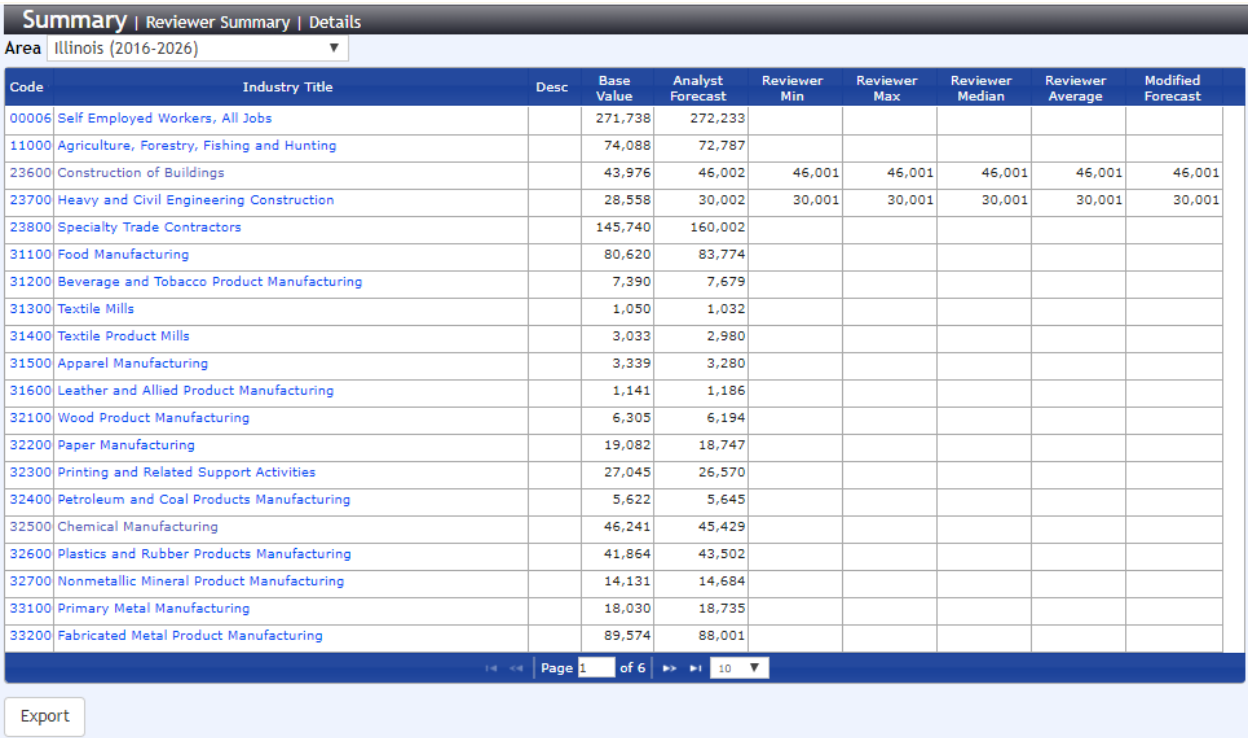


Figure 1: Review menu selections

Summary

Clicking on the summary option will take you to the Summary screen. Select an **Area** from the drop-down menu to view its associated data.



Code	Industry Title	Desc	Base Value	Analyst Forecast	Reviewer Min	Reviewer Max	Reviewer Median	Reviewer Average	Modified Forecast
00006	Self Employed Workers, All Jobs		271,738	272,233					
11000	Agriculture, Forestry, Fishing and Hunting		74,088	72,787					
23600	Construction of Buildings		43,976	46,002	46,001	46,001	46,001	46,001	46,001
23700	Heavy and Civil Engineering Construction		28,558	30,002	30,001	30,001	30,001	30,001	30,001
23800	Specialty Trade Contractors		145,740	160,002					
31100	Food Manufacturing		80,620	83,774					
31200	Beverage and Tobacco Product Manufacturing		7,390	7,679					
31300	Textile Mills		1,050	1,032					
31400	Textile Product Mills		3,033	2,980					
31500	Apparel Manufacturing		3,339	3,280					
31600	Leather and Allied Product Manufacturing		1,141	1,186					
32100	Wood Product Manufacturing		6,305	6,194					
32200	Paper Manufacturing		19,082	18,747					
32300	Printing and Related Support Activities		27,045	26,570					
32400	Petroleum and Coal Products Manufacturing		5,622	5,645					
32500	Chemical Manufacturing		46,241	45,429					
32600	Plastics and Rubber Products Manufacturing		41,864	43,502					
32700	Nonmetallic Mineral Product Manufacturing		14,131	14,684					
33100	Primary Metal Manufacturing		18,030	18,735					
33200	Fabricated Metal Product Manufacturing		89,574	88,001					

Figure 2: Summary screen - Area selected

The table columns include:

- Code - NAICS Code

- Industry Title
- Desc
- Base Value
- Analyst Forecast
- Reviewer Min
- Reviewer Max
- Reviewer Median
- Reviewer Average
- Modified Forecast

Use the arrow buttons at the bottom of the table to scroll forward and backward through the data. Press the **Export** button to download an Excel spreadsheet of the data to your PC.

Reviewer Summary

The Reviewer Summary option enables the viewing of projections by the Reviewer's name. Select a **Reviewer** from the drop-down menu to display data they have reviewed.

Figure 3: Reviewer Summary screen

Details

Navigating to the Details option will display the data in a table, on a graph to view (by both **Level** and **Growth**), and enable the submission and viewing of **Modified Forecasts**.

Select an **Area** and **Industry** from the drop-down menus. To filter by the industries that have been reviewed, click the **Reviewed Only** radio button.

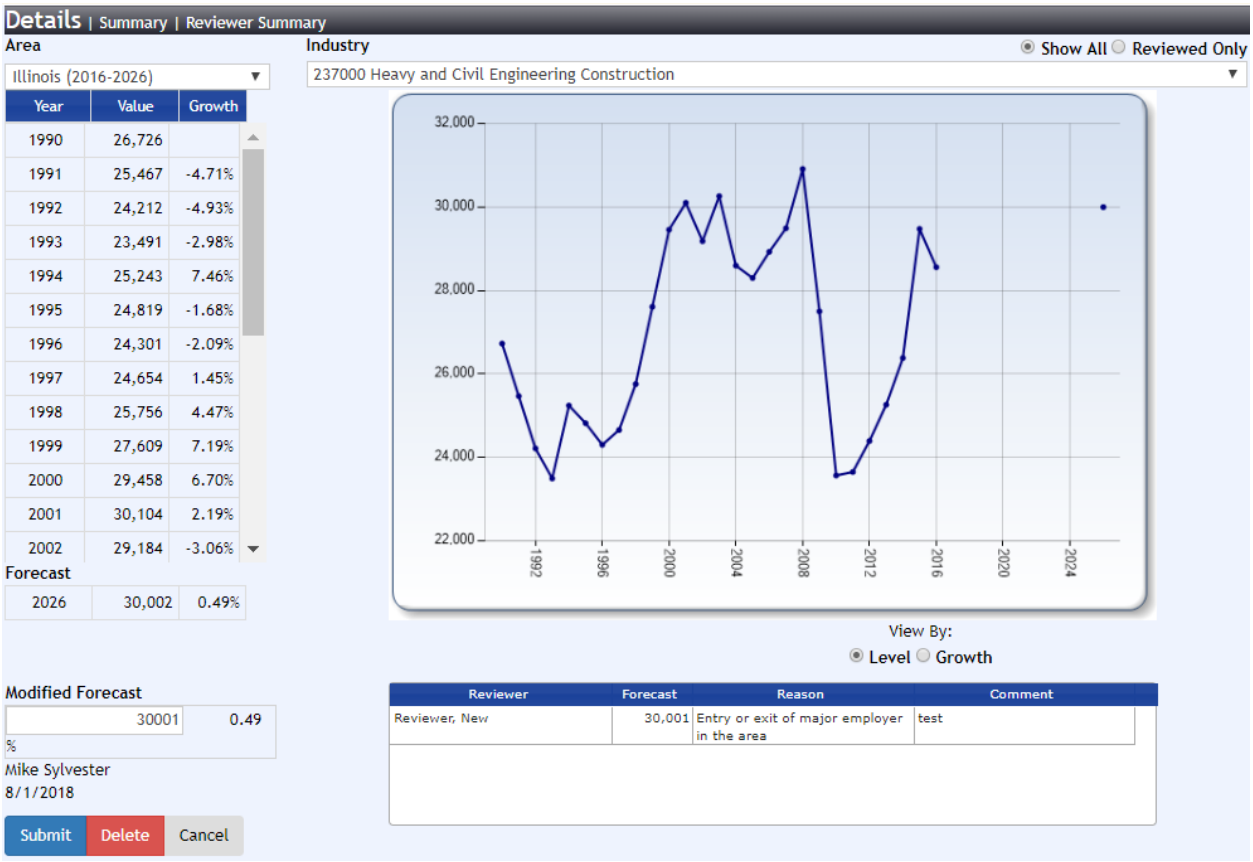


Figure 4: Details screen

To enter a modified forecast, enter a value in the **Modified Forecast** field and click **Submit**. Click **Delete** to remove the Modified Forecast.

Local Review Format

Local Review is designed to review **industry** projections exported from the Projections Suite. Local Review does not enable reviewing of Occupational Projections.

Export Industry Projections

1. Open the Projections Suite and navigate to the **Short Term** or **Long Term** menu. Select the **Output** group menu (you can also hit F9).
2. Select **Export Industry Projections**.

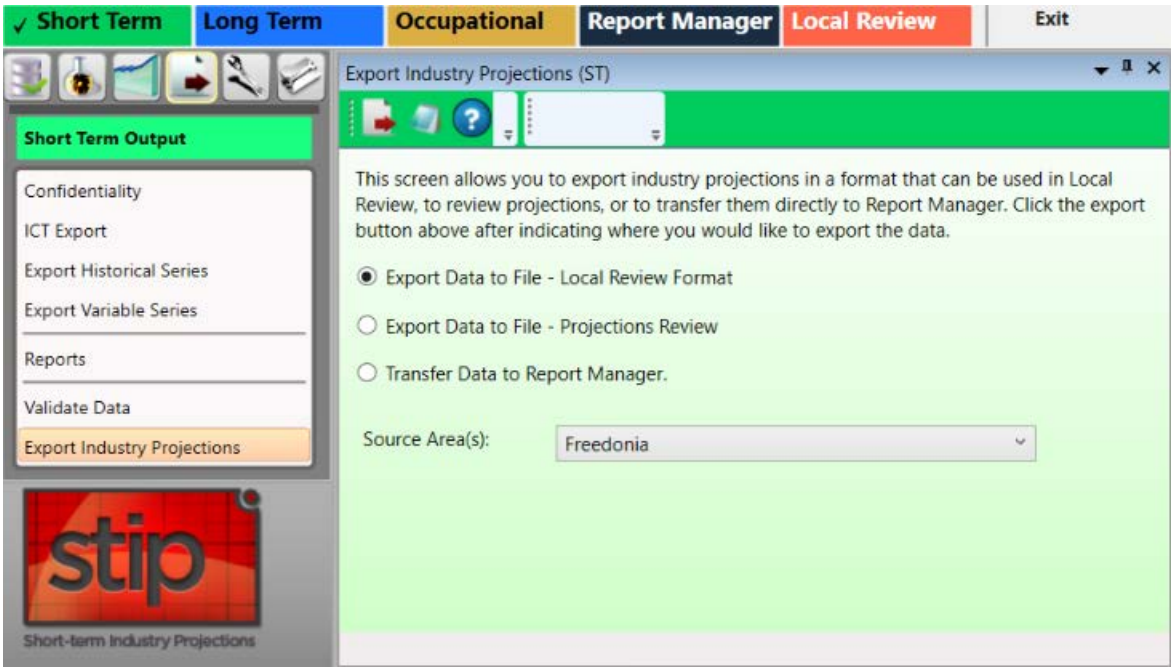


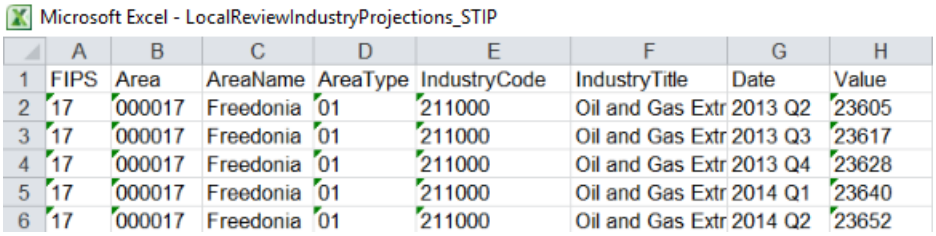
Figure 1: Export Industry Projections module

3. On the screen that appears, select the **Source Area(s)** you would like to transfer to Report Manager. If you would like to select all the areas, select the "All" areas at the top of the list.
4. Click the **Export Data to File - Local Review Format** radio button.
5. When you have made your selection, click the **Export** button on the Active Module Toolbar.
6. A Save As dialog box will display. Name and select a location for the file, then press the **Save** button.
7. A Finished dialog box will display once projections have been exported. Click **OK**.

Local Review File Format

The Local Review file format contains the following columns:

- **FIPS -** State FIPS code (2 character alphanumeric and may contain a zero on the left).
- **Area -** Area Code (valid codes are 6 digits long and may contain zeros left or right and must correspond to the area code found in Manage Areas - Area Directory).
- **AreaName -** The name of the area.
- **AreaType -** Area Type code (2 digits long and may contain a zero on the left). "01" indicates statewide area type. See Manage Areas for the various types.
- **IndustryCode -** Industry Code (valid codes are 6 digits long and may contain zeros on the right and must be a code found in Manage Industries - Industry Directory).
- **IndustryTitle -** Corresponding NAICS Industry Title.
- **Date -** Year and quarter.
- **Value -** Employment value.


Microsoft Excel - LocalReviewIndustryProjections_STIP

	A	B	C	D	E	F	G	H
1	FIPS	Area	AreaName	AreaType	IndustryCode	IndustryTitle	Date	Value
2	17	000017	Freedonia	01	211000	Oil and Gas Extr	2013 Q2	23605
3	17	000017	Freedonia	01	211000	Oil and Gas Extr	2013 Q3	23617
4	17	000017	Freedonia	01	211000	Oil and Gas Extr	2013 Q4	23628
5	17	000017	Freedonia	01	211000	Oil and Gas Extr	2014 Q1	23640
6	17	000017	Freedonia	01	211000	Oil and Gas Extr	2014 Q2	23652

Figure 2: Local Review File Format

Related Content

- Local Review

File Formats

File Formats Introduction

Projections Suite uses a variety of input and output file formats to control how data is imported and exported through Projections Suite. These files can be categorized into two main types: spreadsheet and text. Select a link from the list below to learn more about (and see examples of) individual file formats in Projections. The following list is a comprehensive collection of the Projections input and output files.

To avoid spreadsheet import problems, use the same (or a higher) version of the spreadsheet software used to create the spreadsheet. When this is not possible, find a coworker who has the required version and have them save the spreadsheet into a compatible version.

Spreadsheet File Formats

- Employment Formats - used in Short Term and Long Term Projections
  - Type 1 - Dates as Columns
  - Type 2 - Industries as Columns
  - Type 3 - Industry and Date by Row
- Variable Spreadsheet Format - used Short Term and Long Term Projections
- Industry Control Total (ICT) - used in Occupational Projections
- Area Format - used in all Projections applications
- Validation Section of the ETA File Format and the Geographic Comparison File Format
- Staffing Pattern Spreadsheet Formats - Import Staffing Pattern module of Occupational Data
  - LEWIS FoxPro/Excel
  - BLS FoxPro
- Local Review Format

☞Import Spreadsheet (ST and LT) module instructions.

Text File Formats

- QCEW Data Extract Instructions
- QCEW Output Text Format
- Win202/MSA Text Format

☞Import Text File (ST and LT) module instructions.

Related Content

- Variable Directory (ST and LT)
- Review Variables (ST and LT)
- Preview Variables
- Edit ICT
- Manage Areas (ST, LT, and OP)
- Validation
- Short Term Geographic Comparison (ST and OP)
- Import Staffing Pattern

Employment Spreadsheet Format 1 - Dates as Columns

The spreadsheet format identifies the area and industry per row, with all the date/employment value columns extending to the right. It is a horizontal or wide layout.

The first row in the spreadsheet is reserved for the column headers. Four column headers are required to identify the area and industry, and can be in any order in the header row.

The first row also requires the column header cells that identify the date for each column of employment values. Each of these column header cells must begin with the letter "D" (upper or lower case) followed by the date (e.g., monthly - D199001, D200406; annual - D2008, D2001, etc.). See examples below.

- **fips** - State FIPS code (2 character alphanumeric and may contain a zero on the left).
- **area** - Area Code (valid codes are 6 digits long and may contain zeros left or right and must correspond to the area code found in Manage Areas - Area Directory).
- **areatype** - Area Type code (2 digits long and may contain a zero on the left). "01" indicates statewide area type. See Manage Areas for the various types.
- **naics** - Industry Code (valid codes are 6 digits long and may contain zeros on the right and must be a code found in Manage Industries - Industry Directory).

Microsoft Excel - ExampleFormat1Monthly [Compatibility Mode]

	A	B	C	D	E	F	G	H
1	fips	area	areatype	naics	d199001	d199002	d199003	d199004
2	80	000080	01	000000	772889	777318	784127	793142
3	80	000080	01	111000	40352	40264	40177	40089
4	80	000080	01	112000	31705	31636	31567	31498

Microsoft Excel - ExampleFormat1Annual [Compatibility Mode]

	A	B	C	D	E	F	G	H
1	Fips	areatype	area	NAICS	d1972	d1973	d1974	d1975
2	80	01	000080	000000	1536000	1538240	1567780	1541380
3	80	01	000080	211000	2634	2674	2776	2984
4	80	01	000080	212000	6878	7036	7572	8040

Figure 1: Short Term (top) and Long Term (bottom) Spreadsheet Format 1 examples

☞All other columns in the spreadsheet will be ignored. If definitions are not valid, the record will be ignored in the import with messages displayed. All area, industry, and employment values will fall under the respective column header cell that identifies it.

Related Content

- Import Spreadsheet (ST and LT)
- File Formats Introduction

Employment Spreadsheet Format 2 - Industries as Columns

This spreadsheet format identifies the area and date per row, industries as columns with each Industry/employment value extending to the right. This spreadsheet format may contain both monthly and annual data rows intermingled. It is referred to as a vertical or tall layout.

The first row in the spreadsheet is reserved for the column headers. Four column headers are required to identify the area and date, and can be in any order in the header row:

- **fips** - State FIPS code (2 character alphanumeric and may contain a zero on the left).
- **area** - Area Code (valid codes are 6 digits long and may contain zeros left or right).
- **areatype** - Area Type code (2 digits long and may contain a zero on the left). "00" indicates US variables, "01" indicates statewide values, otherwise the code identifies a specific area type.
- **date** - Specifies the date to be associated with industry employment values.

Microsoft Excel - ExampleFormat2Monthly [Compatibility Mode]

	A	B	C	D	E	F	G	H
1	fips	area	areatype	date	I111000	I112000	I114000	I115000
2	80	000080	01	199001	7494	1093	225	668
3	80	000080	01	199002	7546	1098	186	649
4	80	000080	01	199003	7592	1089	200	635

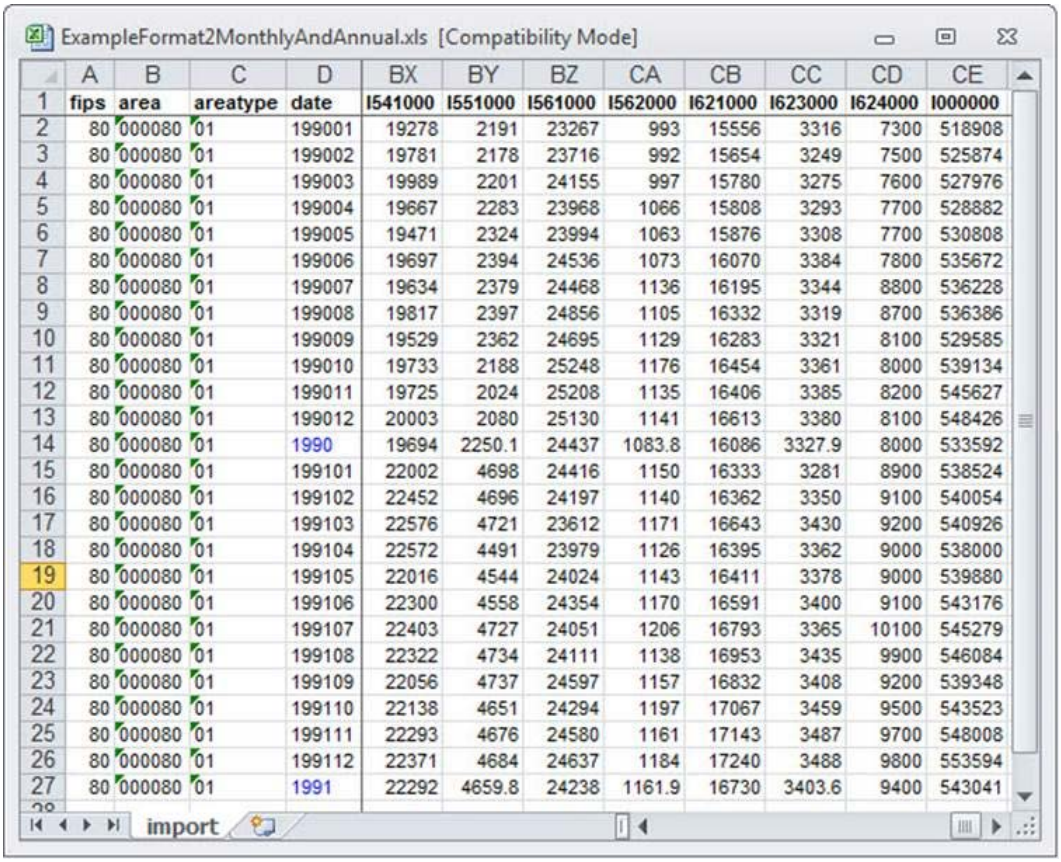
Microsoft Excel - ExampleFormat2Annual [Compatibility Mode]

	A	B	C	D	E	F	G	H
1	fips	area	areatype	date	I111000	I112000	I114000	I115000
2	80	000080	01	1990	7494	1093	225	668
3	80	000080	01	1991	7546	1098	186	649
4	80	000080	01	1992	7592	1089	200	635

Figure 1: Short Term (top) and Long Term (bottom) Format Type 2 examples

The first row also requires the column header cells that identify the industry for each column of employment values. Each of these column header cells must begin with the letter “I” (upper or lower case) followed by the Industry/NAICS code (example: I811000, I626262, I999100, etc.).

This format spreadsheet may contain both monthly and annual data rows intermingled, however, the first row of data will be recognized by the system as the type to import and will ignore other type records. In the example below the first row of data is a monthly type and will import all the monthly type records and ignore the annual type records. If the first row of data contains an annual type then all annual types will be imported and the monthly will be ignored.


ExampleFormat2MonthlyAndAnnual.xls [Compatibility Mode]

	A	B	C	D	BX	BY	BZ	CA	CB	CC	CD	CE
1	fips	area	areatype	date	I541000	I551000	I561000	I562000	I621000	I623000	I624000	I000000
2	80	000080	01	199001	19278	2191	23267	993	15556	3316	7300	518908
3	80	000080	01	199002	19781	2178	23716	992	15654	3249	7500	525874
4	80	000080	01	199003	19989	2201	24155	997	15780	3275	7600	527976
5	80	000080	01	199004	19667	2283	23968	1066	15808	3293	7700	528882
6	80	000080	01	199005	19471	2324	23994	1063	15876	3308	7700	530808
7	80	000080	01	199006	19697	2394	24536	1073	16070	3384	7800	535672
8	80	000080	01	199007	19634	2379	24468	1136	16195	3344	8800	536228
9	80	000080	01	199008	19817	2397	24856	1105	16332	3319	8700	536386
10	80	000080	01	199009	19529	2362	24695	1129	16283	3321	8100	529585
11	80	000080	01	199010	19733	2188	25248	1176	16454	3361	8000	539134
12	80	000080	01	199011	19725	2024	25208	1135	16406	3385	8200	545627
13	80	000080	01	199012	20003	2080	25130	1141	16613	3380	8100	548426
14	80	000080	01	1990	19694	2250.1	24437	1083.8	16086	3327.9	8000	533592
15	80	000080	01	199101	22002	4698	24416	1150	16333	3281	8900	538524
16	80	000080	01	199102	22452	4696	24197	1140	16362	3350	9100	540054
17	80	000080	01	199103	22576	4721	23612	1171	16643	3430	9200	540926
18	80	000080	01	199104	22572	4491	23979	1126	16395	3362	9000	538000
19	80	000080	01	199105	22016	4544	24024	1143	16411	3378	9000	539880
20	80	000080	01	199106	22300	4558	24354	1170	16591	3400	9100	543176
21	80	000080	01	199107	22403	4727	24051	1206	16793	3365	10100	545279
22	80	000080	01	199108	22322	4734	24111	1138	16953	3435	9900	546084
23	80	000080	01	199109	22056	4737	24597	1157	16832	3408	9200	539348
24	80	000080	01	199110	22138	4651	24294	1197	17067	3459	9500	543523
25	80	000080	01	199111	22293	4676	24580	1161	17143	3487	9700	548008
26	80	000080	01	199112	22371	4684	24637	1184	17240	3488	9800	553594
27	80	000080	01	1991	22292	4659.8	24238	1161.9	16730	3403.6	9400	543041

import

Figure 2: Type 2 format example

☞All other columns in the spreadsheet will be ignored. If definitions are not valid, the record will be ignored in the import and messages will be displayed to indicate the number of records not imported. All area, date, and industry employment values will fall under the respective column header cell that identifies it.

Related Content

- Import Spreadsheet (ST and LT)
- File Formats Introduction
- Export Employment Series

Employment Spreadsheet Format 3 - Industry and Date by Row

This spreadsheet format identifies the area, industry, level, and date per row. Each industry/employment value extends to the right. For Short Term, this spreadsheet format can contain both monthly and annual data rows. It is referred to as a square or block/vertical or tall layout.

The first row in the spreadsheet is reserved for the column headers. Six column headers are required and can be in any order in the header row:

- **FIPS** - State FIPS code (2 character alphanumeric and may contain a zero on the left).
- **Area** - Area Code (valid codes are 6 digits long and may contain zeros left of right).
- **AreaType** - Area Type code (2 digits long and may contain a zero on the left). "00" indicates US variables, "01" indicates statewide values, otherwise the code identifies a specific area type.
- **NAICS** - Industry Code (valid codes are 6 digits long and may contain zeros on the right).
- **Level** - Industry Level.
- **Date** - Specifies the date to be associated with industry employment values.

Microsoft Excel - ExampleFormat3Monthly [Compatibility Mode]

	A	B	C	D	E	F
1	FIPS	Area	Areatype	NAICS	Level	Date
2	80	000080	01	236000	726	200801
3	80	000080	01	237000	323	200801
4	80	000080	01	238000	75	200801

Microsoft Excel - ExampleFormat3Annual [Compatibility Mode]

	A	B	C	D	E	F
1	FIPS	Area	Areatype	NAICS	Level	Date
2	80	000080	01	236000	726	2008
3	80	000080	01	237000	323	2008
4	80	000080	01	238000	75	2008

Figure 1: Short Term (top) and Long Term (bottom) Format Type 3 examples

☞All other columns in the spreadsheet will be ignored. If definitions are not valid, the record will be ignored in the import and messages will be displayed to indicate

the number of records not imported. All area, industry, level, and date values will fall under the respective column header cell that identifies it.

Related Content

- Import Spreadsheet (ST and LT)
- File Formats Introduction

Variable Spreadsheet Format

The variable spreadsheet format identifies the date, and one or more employment variable values per row. The spreadsheet must either contain monthly (Short Term) or annual (Long Term) data, but cannot contain both in the same file.

For more information about importing spreadsheets, reference the Import Spreadsheet (ST and LT) modules. Reference the Variable Directory modules (ST and LT) for additional information.

Variable Spreadsheet Layout

The first row in the spreadsheet is reserved for column headers. The required columns are:

- **date** - Specifies the date to be associated with variables.
- **(variable name)** - At least one variable, and as many as needed. These variable names must be exact, as listed how you want them displayed in the Variable Directory (including spaces). If the name is deviates in any way from what is already listed in the Variable Directory, a new variable will be added.

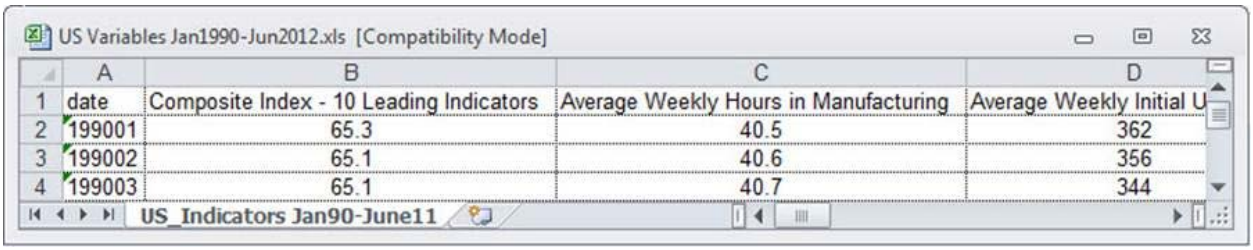


Figure 1: Short Term variables spreadsheet format

☞All variables and data values will fall under the respective column header cell that identifies it.

Related Content

- Variable Directory (ST and LT)
- Review Variables (ST and LT)
- Preview Variables
- File Formats Introduction

ICT Spreadsheet Format

This spreadsheet format supports importing Industry Control Total (ICT) data for staffing patterns. It has ten required columns (in **bold**) and two optional columns:

- **indid** - Industry ID Code (valid codes are 6 digits long and may contain zeros on right).
- indname - Industry name (optional column).
- **stfips** - State FIPS code (2 character alphanumeric and may contain a zero on the left).
- **areatype** - Area Type code (2 digits long and may contain a zero on the left). "00" indicates US variables, "01" indicates state-wide values, otherwise the code identifies a specific area type.
- **areacode** - Area Code (valid codes are 6 digits long and may contain zeros left or right).
- areaname - Name of the area (optional column).
- **baseyear** - Base year.
- **base** - Base employment.
- **projyear** - Projected year.
- **proj** - Projected employment.
- **conf1** - Primary Confidentiality flag (the new ICT record's confidentiality flag will be a combination of the primary and secondary flags).
- **conf2** - Secondary Confidentiality flag.

	A	B	C	D	E	F	G	H	I	J	K	L
1	indid	indname	stfips	areatype	areacode	areaname	baseyear	base	projyear	proj	conf1	conf2
2	000000	Total All In	78	01	000078	Freedonia	2017	36204	2019	36471	0	0
3	230000	Constructi	78	01	000078	Freedonia	2017	0	2019	1908	0	0
4	236000	Constructi	78	01	000078	Freedonia	2017	794	2019	887	0	0
5	237000	Heavy and	78	01	000078	Freedonia	2017	456	2019	541	0	0
6	238000	Specialty	78	01	000078	Freedonia	2017	482	2019	480	0	0
7	310000	Manufactu	78	01	000078	Freedonia	2017	0	2019	459	0	0
8	312000	Beverage	78	01	000078	Freedonia	2017	283	2019	288	0	0
9	327000	Nonmetalli	78	01	000078	Freedonia	2017	158	2019	151	0	0
10	334000	Computer	78	01	000078	Freedonia	2017	20	2019	20	0	0
11	420000	Wholesale	78	01	000078	Freedonia	2017	0	2019	763	0	0
12	424000	Merchant	78	01	000078	Freedonia	2017	755	2019	763	0	0
13	440000	Retail Trad	78	01	000078	Freedonia	2017	0	2019	5797	0	0
14	441000	Motor Veh	78	01	000078	Freedonia	2017	395	2019	386	0	0
15	443000	Electronic	78	01	000078	Freedonia	2017	203	2019	194	0	0

Figure 1: ICT spreadsheet format

☞All other columns in the spreadsheet will be ignored. Empty cell values will cause the row to be ignored without creating an ICT record for that row of data. All values will fall under the respective column header that identifies it.

Related Content

- Import ICT
- Edit ICT
- ICT Export
- File Formats Introduction

Area Format

This spreadsheet format provides the means to create multiple new areas in a single operation. Creating areas from a spreadsheet is not a typical procedure (usually analysts will simply build areas with the templates provided in the Manage Areas module), but the option is made available through the Import Spreadsheet (ST and LT) modules.

The first row in the spreadsheet is reserved for the column headers. Four column headers are required to identify the area and industry, and can be in any order in the header row:

- **fips** - State FIPS code (2 character alphanumeric and may contain a zero on the left).
- **area** - Area code (valid codes are 6 digits long and may contain zeros left or right).
- **areatype** - Area Type code (2 digits long and may contain a zero on the left). "00" indicates US variables, "01" indicates statewide values, otherwise the code identifies a specific area type.
- **name** - Area name.

Microsoft Excel - ImportAreaFormat

	A	B	C	D
1	fips	area	areatype	name
2	69	999103	14	Area 1
3	69	999104	14	Area 2
4	69	999105	14	Area 3
5	69	999106	14	Area 4
6	69	999107	14	Area 5

Figure 1: Area Format spreadsheet

☞All other columns in the spreadsheet will be ignored. The areatype code must already exist in the application database. All area values will fall under the respective column header cell that identifies it.

Related Content

- Manage Areas
- File Formats Introduction

Validation Section of the ETA File Format

Two of these file formats are produced in the Projections Suite: one for Industry data and one for Occupational data. Their formats are similar, but have minor differences listed below. This collection of columns is used in the Validation module in Occupational Projections to validate file contents before uploading ETA data. Each set of columns listed below is immediately followed by the contents of the Geographic Comparison File Format.

For more information on the ETA deliverable process from the Projections Central Support website, click here.

The file produced in **Occupational** Projections must contain the following eleven columns to pass validation:

- **stfips** - The two-digit state FIPS.
- **periodid** - 2 if it is short term data and 10 if it is long term data.
- **occcode** - The occupation code.
- **title** - The occupation title.
- **estoccprj** - The base year employment value.
- **projoccprj** - The projected year employment value.
- **nchg** - The numeric change. (projoccprj - estoccprj).
- **pchg** - The percent change. (projoccprj - estoccprj) / estoccprj * 100. Entered to five decimal places.
- **aopent** - The annual average total openings.
- **suppress** - The suppression value indicates whether the data is confidential. 1 if it is confidential and 0 if not.
- **baseyear** - The base year.
- **projectionyear** - The projection year.

The file produced in **Industry** (both Short Term and Long Term) Projections must contain the following ten columns to pass validation:

- **stfips** - The two-digit state FIPS.
- **periodid** - 2 if it is short term data and 10 if it is long term data.
- **indcode** - The industry code.
- **title** - The industry title.
- **level** - Occupational level (SOC level).
- **basevalue** - The base year employment value.
- **projectionvalue** - The projected year employment value.
- **nchg** - The numeric change (proj - base).
- **pchg** - The percent change (proj - base) / base * 100). Entered to five decimal places.

- **suppress** - The suppression value indicates whether the data is confidential. 1 if it is confidential and 0 if not.
- **baseyear** - The base year.
- **projectionyear** - The projection year.

Related Content

- Validation
- Upload Area Connection
- File Formats Introduction
- Geographic Comparison File Format

Geographic Comparison File Format

The Short and Long Term Geographic Comparison modules generate an Excel spreadsheet with the state comparison data. These columns are immediately preceded by the Validation Section of the ETA File Format.

The following information can also be found inside the generated file, under the Column Definitions tab. The Geographic Comparison file formats are:

Column	Occupation Format Definition	Column	Industry Format Definition
L	Growth Ratio	K	Growth Ratio
M	Number of States Submitting this Occupation Code	L	Number of States Submitting this Industry Code
N	Number of States with a Higher Percent Change	M	Number of States with a Higher Percent Change
O	Number of States with a Lower Percent Change	N	Number of States with a Lower Percent Change
P	Minimum Percent Change of All States	O	Minimum Percent Change of All States
Q	Maximum Percent Change of All States	P	Maximum Percent Change of All States
R	Lowest Percent Change of All States, designated by a 1	Q	Lowest Percent Change of All States, designated by a 1
S	Highest Percent Change of All States, designated by a 1	R	Highest Percent Change of All States, designated by a 1
T	1 of 3 States with the Lowest Percent Change, designated by a 1	S	1 of 3 States with the Lowest Percent Change, designated by a 1
U	1 of 3 States with the Highest Percent Change, designated by a 1	T	1 of 3 States with the Highest Percent Change, designated by a 1
V	1 of 3 States with a Positive Percent Change, designated by a 1	U	1 of 3 States with a Positive Percent Change, designated by a 1
W	1 of 3 States with a Negative Percent Change, designated by a 1	V	1 of 3 States with a Negative Percent Change, designated by a 1
X	Only State with a Positive Percent Change, designated by a 1	W	Only State with a Positive Percent Change, designated by a 1
Y	Only State with a Negative Percent Change, designated by a 1	X	Only State with a Negative Percent Change, designated by a 1
Z	Each State's Percent Change in Rank Order	Y	Each State's Percent Change in Rank Order

Column	Occupation Format Definition	Column	Industry Format Definition
AA	Number of States Submitting this Occupation Code	Z	Number of States Submitting this Industry Code
AB	Number of States with a Higher Growth Ratio	AA	Number of States with a Higher Growth Ratio
AC	Number of States with a Lower Growth Ratio	AB	Number of States with a Lower Growth Ratio
AD	Minimum Growth Ratio of All States	AC	Minimum Growth Ratio of All States
AE	Maximum Growth Ratio of All States	AD	Maximum Growth Ratio of All States
AF	State with the Lowest Growth Ratio, designated by a 1	AE	State with the Lowest Growth Ratio, designated by a 1
AG	State with the Highest Growth Ratio, designated by a 1	AF	State with the Highest Growth Ratio, designated by a 1
AH	1 of 3 States with the Lowest Growth Ratio, designated by a 1	AG	1 of 3 States with the Lowest Growth Ratio, designated by a 1
AI	1 of 3 States with the Highest Growth Ratio, designated by a 1	AH	1 of 3 States with the Highest Growth Ratio, designated by a 1
AJ	1 of 3 States with a Negative Growth Ratio, designated by a 1	AI	1 of 3 States with a Negative Growth Ratio, designated by 1
AK	1 of 3 States with a Positive Growth Ratio, designated by a 1	AJ	1 of 3 States with a Positive Growth Ratio, designated by a 1
AL	Only State with a Negative Growth Ratio, designated by a 1	AK	Only State with a Negative Growth Ratio, designated by a 1
AM	Only State with a Positive Growth Ratio, designated by a 1	AL	Only State with a Positive Growth Ratio, designated by a 1
AN	Each State's Growth Ratio in Rank Order	AM	Each State's Growth Ratio in Rank Order
AO	Each State's Base Employment in Rank Order	AN	Each State's Base Employment in Rank Order

The procedure implemented in this report uses a growth ratio to assign a Projection Descriptor and replicates the methodology used by the U.S. Bureau of Labor Statistics in its review of 10-year, occupational employment projections. This report also uses percent change to rank each state on a number of additional descriptors. The mix of growth ratio and percent change descriptors should provide a comprehensive depiction of a state’s occupational projections.

Occupations with a suppress value of 1 are not analyzed and excluded from the comparative rankings. These occupations do not appear on the completed state analysis spreadsheet.

The results in the Growth Ratio are estimated for each occupation by dividing the occupation's growth rate in the state to the state's projected growth rate for total employment. The ratio always uses the sign of the numerator.

The state comparisons could result in a number of states with the same value. For example, if six states are tied at #10 for the rank order, the next rank would be 16. This explains how N could equal 50, with 9 having a higher percent change and 35 with a lower percent change. This indicates 6 states were tied at a value.

Most ties should be eliminated by using a percentage change calculation to five decimal places.

Related Content

- Short Term Geographic Comparison (ST and OP)
- Long Term Geographic Comparison (LT and OP)
- Validation Section of the ETA File Format
- File Formats Introduction

LEWIS FoxPro/Excel Staffing Pattern Format

Field specifications for LEWIS FoxPro/Excel staffing pattern file structure:

Field	Field Name	Type	Width, Dec
1	RECTYPE	Char	1
2	ESTYEAR	Char	4
3	PANEL	Char	1
4	STFIPS	Char	2
5	AREATYPE	Char	2
6	AREA	Char	6
7	INDCLASS	Char	1
8	INDCODE	Char	6
9	OCCCLASS	Char	1
10	OCCCD	Char	7
11	SUBOCCCD	Char	7
12	SCHEDULES	Int	4
13	IMPSCHED	Int	4
14	EMPL	Num	12,2
15	EMPLVAR	Num	12,2
16	EMPLRSE	Num	6,2
17	CONFFLAG	Int	4
18	QUALFLAG	Int	4
19	RSEFLAG	Int	4

Related Content

- Import Staffing Pattern
- File Formats Introduction

BLS FoxPro Staffing Pattern Format

Field specifications for BLS Staffing Pattern file structure for FoxPro.dbf file:

Field	Field Name	Type	Width, Dec
1	AREA	Char	7
2	NAICS	Char	6
3	FRAME_N	Num	10,1
4	SAMPLE_N	Num	8
5	RESPNDE_N	Num	8
6	RESPNDW_N	Num	8
7	TOTOCC_N	Num	8
8	RSPOCCE_N	Num	8
9	RSPOCCW_N	Num	8
10	OCC_CODE	Char	7
11	OCC_TITL	Char	150
12	RAW_EMP	Num	12,1
13	ROUNDEMP	Num	12
14	MEANWAGE	Num	7,2
15	MN_THRD	Num	7,2
16	MN_2THD	Num	7,2
17	WPCT10	Num	7,2
18	WPCT25	Num	7,2
19	WPCT50	Num	7,2
20	WPCT75	Num	7,2
21	WPCT90	Num	7,2
22	A_MEAN	Num	9
23	A_MNTHRD	Num	9
24	A_MN2THD	Num	9
25	A_WPCT10	Num	9
26	A_WPCT25	Num	9

Field	Field Name	Type	Width, Dec
27	A_WPCT50	Num	9
28	A_WPCT75	Num	9
29	A_WPCT90	Num	9
30	PCTE_IMP	Num	6,1
31	PCTW_IMP	Num	6,1
32	WMU_PRSE	Num	6,1
33	EMP_PRSE	Num	6,1
34	CONF_EMP	Char	1
35	CONF_WAGE	Char	1
36	QUAL_EMP	Char	1
37	QUAL_WAGE	Char	1
38	RSE_FLAG	Char	1
39	ROLLUP	Char	8
40	RELEASE	Char	9

Related Content

- Import Staffing Pattern
- File Formats Introduction

Staffing Pattern Spreadsheet Format

This spreadsheet format identifies the area, industry, occupation, employment level, and confidentiality per row. This spreadsheet format is used to import data into the Projections Application that was not necessarily created using Projections Suite. Match your data to the format below and import it using the Import Staffing Pattern module in Occupational Projections.

Column headers must be in the first row of the spreadsheet. Seven column headers are required and can be in any order in the header row:

- **indid** - Industry ID code (valid codes are 6 digits long and may contain zeros on the right).
- **occid** - Occupational ID code (valid codes start with 2 digits, followed by a dash, and then 4 digits. Example: 00-0000, 11-0000, 19-1031, etc.).
- **areacode** - Six-digit area identification code.
- **areatype** - Area Type code (2 digits long and may contain a zero on the left). "00" indicates US variables, "01" indicates statewide values, and otherwise the code identifies a specific area type.
- **stfips** - State FIPS code (2 character alphanumeric and may contain a zero on the left).
- **empl** - Employment value (whole number without decimal).
- **confflg** - Confidentiality flag (either 0 or 1, where 1 is confidential).

StaffingPattern_Freedonia.xlsx

	A	B	C	D	E	F	G
1	indid	occid	areacode	areatype	stfips	empl	confflag
2	814000	11-1011	000080	01	80	32	0
3	814000	11-1021	000080	01	80	582	0
4	814000	11-2011	000080	01	80	43	0
5	814000	11-2021	000080	01	80	23	0
6	814000	11-2022	000080	01	80	2	0
7	814000	11-2031	000080	01	80	111	0
8	814000	11-3011	000080	01	80	48	0
9	814000	11-3021	000080	01	80	25	0
10	814000	11-3031	000080	01	80	7	0
11	814000	11-3061	000080	01	80	10	0
12	814000	11-9031	000080	01	80	1	0

staffimport

Figure 1: Staffing Pattern spreadsheet format

☞All other columns in the spreadsheet will be ignored. All area, industry, level, and date values will fall under the respective column header cell that identifies it.

Related Content

- Import Staffing Pattern
- Edit Staffing Pattern
- File Formats Introduction

Local Review Format

Local Review is designed to review **industry** projections exported from the Projections Suite. Local Review does not enable reviewing of Occupational Projections.

Export Industry Projections

1. Open the Projections Suite and navigate to the **Short Term** or **Long Term** menu. Select the **Output** group menu (you can also hit F9).
2. Select **Export Industry Projections**.

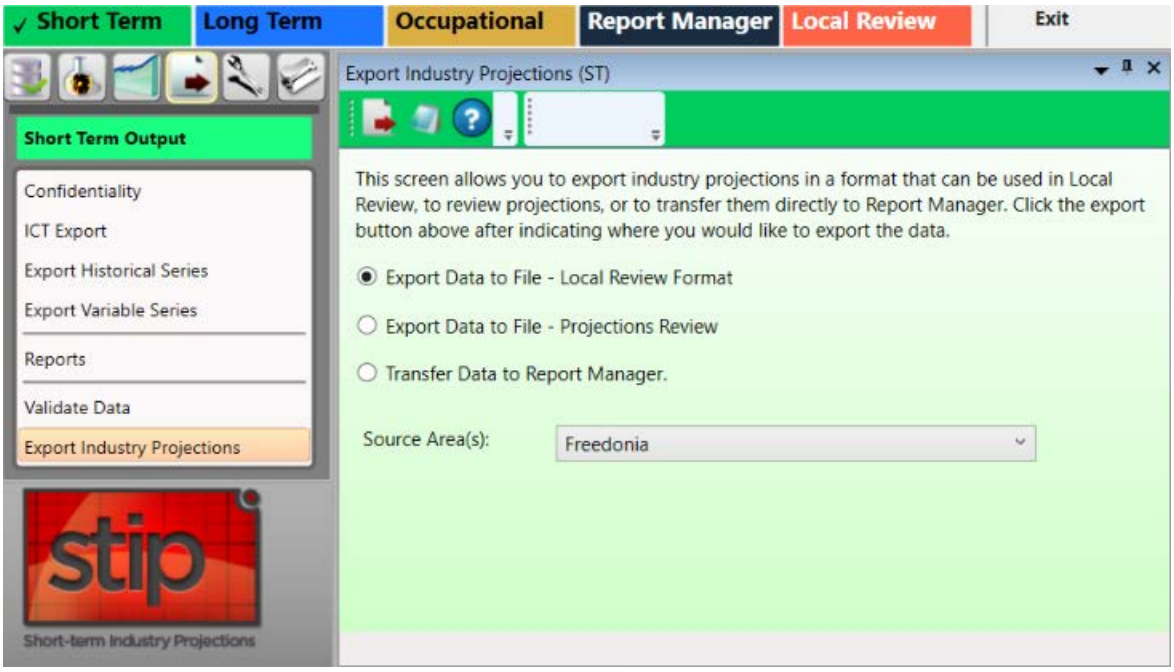


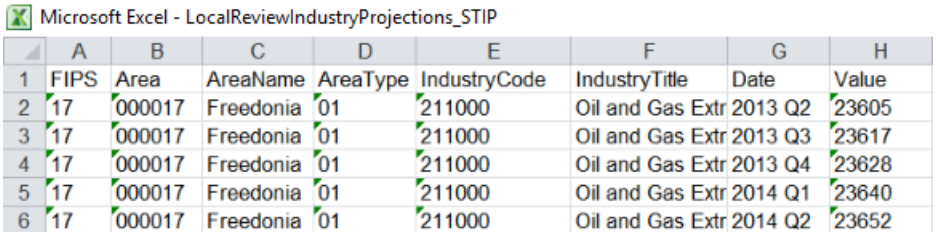
Figure 1: Export Industry Projections module

3. On the screen that appears, select the **Source Area(s)** you would like to transfer to Report Manager. If you would like to select all the areas, select the "All" areas at the top of the list.
4. Click the **Export Data to File - Local Review Format** radio button.
5. When you have made your selection, click the **Export** button on the Active Module Toolbar.
6. A Save As dialog box will display. Name and select a location for the file, then press the **Save** button.
7. A Finished dialog box will display once projections have been exported. Click **OK**.

Local Review File Format

The Local Review file format contains the following columns:

- **FIPS -** State FIPS code (2 character alphanumeric and may contain a zero on the left).
- **Area -** Area Code (valid codes are 6 digits long and may contain zeros left or right and must correspond to the area code found in Manage Areas - Area Directory).
- **AreaName -** The name of the area.
- **AreaType -** Area Type code (2 digits long and may contain a zero on the left). "01" indicates statewide area type. See Manage Areas for the various types.
- **IndustryCode -** Industry Code (valid codes are 6 digits long and may contain zeros on the right and must be a code found in Manage Industries - Industry Directory).
- **IndustryTitle -** Corresponding NAICS Industry Title.
- **Date -** Year and quarter.
- **Value -** Employment value.


Microsoft Excel - LocalReviewIndustryProjections_STIP

	A	B	C	D	E	F	G	H
1	FIPS	Area	AreaName	AreaType	IndustryCode	IndustryTitle	Date	Value
2	17	000017	Freedonia	01	211000	Oil and Gas Extr	2013 Q2	23605
3	17	000017	Freedonia	01	211000	Oil and Gas Extr	2013 Q3	23617
4	17	000017	Freedonia	01	211000	Oil and Gas Extr	2013 Q4	23628
5	17	000017	Freedonia	01	211000	Oil and Gas Extr	2014 Q1	23640
6	17	000017	Freedonia	01	211000	Oil and Gas Extr	2014 Q2	23652

Figure 2: Local Review File Format

Related Content

- Local Review

QCEW Data Extract

QCEW/Win Text File Extract Procedure

1. A state analyst must request QCEW run job ES2J247D (also known as 247D). The analyst must identify the parameters. Parameters could include:

   - 3-digit for state wide or counties
   - Any ownership value
   - Date range
   - Annual versus monthly

2. The QCEW analyst will download the file. The file will be named YBU**49X**.A145.JOB247D.ALMS1. 49X is the Utah state FIPS code. Your state code will be in this position.

3. The state analyst will review the data. The analyst will generally import the text file into a spreadsheet to validate the data. Once the data is validated in the spreadsheet, it can be uploaded as spreadsheet file format Type 1 - 3.

4. Use the Import Text File (ST and LT) or Import Spreadsheet (ST and LT) modules to import the file into Projections Suite.

Related Content

- QCEW Output Text Format
- Win202/MSA Text Format
- File Formats Introduction

QCEW Output Text Format

The QCEW report from the job 247D ALMIS Extract File format (ES2ALMS) consists of a fixed set of **38** required columns and an additional 4 columns for optional data. Consequently, the import software expects to find either **38** or **42** columns. If the text file has fewer or a greater number columns the Projections application will display errors. The following is the layout of the fixed columns:

Columns	Length	Description
1 - 2	2	Not used.
3	1	<space>
4 - 7	4	ALMIS-specific county code, including one-byte area code leading sub-field. Column 4 = ALMIS area code portion of county identifier Columns 5 - 7 = 3-digit County FIPS code
8	1	<space>
9 - 10	2	Classification code for area defined above.
11	1	<space>
12 - 17	6	NAICS code.
18	1	<space>
19 - 22	4	This may either represent a 4-digit year, or a 2-digit year and 2-digit quarter combined; however, no sub-field definitions have been provided. The quarter field is actually defined separately, later in the record.
23 - 24	2	Month of the year for ALMIS data.
25	1	<space>
26	1	Quarter for ALMIS data (1, 2, 3, or 4).
27	1	<space>
28 - 35	8	ALMIS employment.
36	1	<space>
37	1	ALMIS source code.
38	1	<space>
39	1	Ownership code (1, 2, 3, or 5).
40	1	<space>

Columns	Length	Description
41	1	Non-disclosure suppression indicator ('0' = disclosable, '1' = non-disclosable).
42	1	<space>

Related Content

- Import Text File (ST and LT)
- Import Spreadsheet (ST and LT)
- File Formats Introduction
- QCEW Data Extract Instructions

Win202/MSA Text Format

The Win202/MSA format is similar to the standard QCEW format except that the area code has an additional column. The import software expects that this format has **39** columns or **43** columns. If the text file has fewer or a greater number columns the application will display errors. The following is the layout of the fixed columns:

Columns	Length	Description
1 - 2	2	Not used.
3	1	<space>
4 - 8	5	ALMIS-specific county code.
9	1	<space>
10 - 11	2	Classification for area defined above.
12	1	<space>
13 - 18	6	NAICS code.
19	1	<space>
20 - 23	4	This may either represent a 4-digit year, or a 2-digit year and 2-digit quarter combined; however, no sub-field definitions have been provided. The quarter field is actually defined separately, later in the record.
24 - 25	2	Month of the year.
26	1	<space>
27	1	Quarter for ALMIS data (1, 2, 3, or 4).
28	1	<space>
29 - 36	8	ALMIS employment.
37	1	<space>
38	1	ALMIS source code.
39	1	<space>
40	1	Ownership code (1, 2, 3, or 5).
41	1	<space>
42	1	Non-disclosure suppression indicator ('0' = disclosable, '1' = non-disclosable).
43	1	<space>

Related Content

- Import Text File (ST and LT)
- Import Spreadsheet (ST and LT)
- File Formats Introduction
- QCEW Data Extract Instructions

Statistical and Technical Terms

Actual Values

Actual values are the available set of historical observations (values) for a time series. Measures of Historical Fit, such as the R-Squared, are based on the difference between model predicted values and actual values over the Sample Period. Forecast evaluation statistics, such as Mean Absolute Percentage Error, are based on the difference between projected values and actual values over the projection period. The smaller the Residuals are, the better the fit of a statistical model. Actual values associated with the final employment projections may not be available until you initiate the next round of projections.

Adjusted R-Squared

The Adjusted R-Squared takes into account the Number of Observations and the number of variables used in estimating the "goodness of fit" of the model to the actual data. Unlike the R-Squared, the Adjusted R-Squared does not necessarily increase as additional variables are added to an equation. In fact, the Adjusted R-Squared will only increase when adding Independent Variables to the model if the additional explained variation in the dependent variable more than compensates for the loss of a degree of freedom when an Independent Variable is added. It is a particularly useful measure when comparing models that have a different number of Independent Variables or a different Number of Observations.

$$R^2_{adj} = 1 - \left[\frac{(1-R^2)(n-1)}{n-k}\right]$$

Where n = number of time-series observations, and k = number of Independent Variables.

ARMA Models

Time series approaches are distinguished by their reliance on past behavior of the *dependent variable* alone to project the most likely future path. The potential causal role of explanatory variables is disregarded; therefore, spurious regression relationships and inaccurate input projections will not contribute to *projection errors*. Data requirements are minimal because the **Employment Series** alone provides full information for time series model estimation and projections. The family of ARMA(p,q) time series models combine autoregressive and moving average components.

$$AR\ component: Y(t) = d_y + f_i\ y(t-1) + f_2\ y(t-2) + e_y\ (t)$$
$$MA\ component: Y(t) = d_y + e_y\ (t) - g_1 e_y\ (t-1) - g_2\ e_y\ (t-2)$$

For example, an ARMA(1,1) process relies on the most recent past values of the dependent variable (p=1) and recent errors or disturbances (q=1) to describe the current observation of the dependent variable series.

$$Y(t) = d_y + f_1\ y(t-1) + g_1\ e_y\ (t-1) + e_y\ (t)$$

An Optimization Process is used in select industry models to determine ARMA model parameters (f and g) that will minimize the Sum of Squared Residuals over the Sample Period.

ARMA model projections are constructed sequentially because each projection value depends on information from the preceding period. Statistical details relating to Sample Period (including Coefficient Estimates, standard errors, and R-Squared) and projection evaluation (projection values, projection errors, Mean Absolute Percentage Error) are presented in a comparable format to the OLS model output. The Q-Statistic is also presented to determine if any systematic pattern of the Residuals remains.

All of the ARMA Models in the system are estimated on monthly employment data which has been differenced once relative to the previous year. The system offers a variety of ARMA(p,q) models including ARMA(1,0), ARMA(2,0), ARMA(3,0), ARMA(0,1), ARMA(1,1), ARMA(2,1), ARMA(0,2), ARMA(1,2), and ARMA(2,2).

ARMA(1,0), ARMA(2,0) and ARMA(3,0) have an autoregressive component without a corresponding moving average component. ARMA(0,1) and ARMA(0,2) have moving average components, but no autoregressive ones.

Autoregressive Moving Average Method

The most common Autoregressive (AR) Moving Average (MA) method is referred to as Box-Jenkins and is abbreviated as ARIMA. Project Single Region uses a variation of the ARIMA model known simply as ARMA, with no integrated term.

Autoregressive Process

Auto-regression is a form of regression where the dependent variable is related to past values of itself at varying time lags. The number of past values is defined by the parameter (**ρ**). Thus, an AR(**ρ**) process is generated as a weighted average of past observations. Each of these past observations is influenced, in turn, by its own history. Thus, the data series will exhibit an extended "memory" with characteristic periods of gradual adjustment. An autoregressive process will exhibit a greater degree of persistence than a Moving Average Process. For example, under an AR(1)

$$Y(t) = d_y + f_1\, Y(t-1) + e_y(t)$$

the most recent observation ($Y(t-1)$) will determine the expected difference between the current short run value and the long run trend or constant.

Forecast Values will follow a path of dynamic adjustment that eventually returns to long run expected values for the data series. AR(p) projections can be generated by selecting ARMA Models without a moving average component: ARMA(1,0), ARMA(2,0), ARMA(3,0).

BVAR Models

The Bayesian Vector Auto-regression (BVAR) model resolves some of the difficult issues associated with standard VAR. In general, collinearity problems increase and Degrees of Freedom decline as the number of Coefficient Estimates grows. To facilitate estimation under these conditions we may elect to introduce prior information regarding the VAR model's many parameters. The BVAR framework relies on a mixed estimation procedure described by Theil and Goldberger (1960) which incorporates prior statistical estimates (or simply prior beliefs) on parameter means and variances.

Litterman (1981) proposed a set of prior beliefs for BVAR Models. The first lag of each equation's *dependent variable* has a mean of one while all other explanatory arguments are assigned means of zero. Prior variances allow some movement away from these values but the Bayesian priors are imposed with more "tightness" as lag length increases. The system employs prior variances suggested by Doan (1990) which are more relaxed than Litterman's. Hamilton (1994) provides a thorough review.

The STIP projections system provides a pre-defined family of BVAR Models with different sets of explanatory variables. "Indicators" refers to a preset model based on the set of Leading Indicators that you have already identified. The "Industries" option calls for a preset model based on Related Industries. Leading Indicators and Related Industries are combined to form the set of Independent Variables in the "Full" option. With the "User-Defined" option, you can define industry-specific BVAR models based on a more extensive set of explanatory variable combinations.

The VAR method can be plagued by overfitting, due to low Degrees of Freedom and the complexity of VAR model estimation. Also, high correlations across lagged variables in the VAR can produce serious multicollinearity problems. The BVAR answer to these possible problems with the unrestrained Vector Autoregression is to place prior restrictions on the coefficients. The coefficients are set at lag 1, and there is a restriction on how much they can change in subsequent lag periods. This approach lessens the possibility of overfitting, multicollinearity, and spurious coefficients that can produce unrealistic forecasts.

Calculate Projections

Terms like "Year Differential Factor" and "Change Factor Differential" are descriptive labels. All formulas are assumed to be at the individual I/O cell level.

$$\begin{aligned}
&\mathrm{b} = \text{Base Year Employment Estimate} \\
&\mathrm{s} = \text{Staffing Ratio} \\
&\mathrm{i} = \text{Industry Control Total}
\end{aligned}$$

$$\mathrm{b} = \mathrm{s} \cdot \mathrm{i}$$

$$\begin{aligned}
&\mathrm{c} = \text{CHG_EST} \\
&\mathrm{f} = \text{Change Factor} \\
&\mathrm{y} = \text{Year Differential Factor}
\end{aligned}$$

$$\begin{aligned}
&c = b \cdot (((f-1) \cdot y) + 1) \\
&y = d/10 \\
&d = Projected - Base\,Year\;Difference, i.e., 2028 - 2018 = 10
\end{aligned}$$

The timeframe adjustment is made because the change factors assume a ten-year projections period.

p= Projected Employment
g = Change Factor Differential
k = Sum of CHG_EST for Industry
j = ICT Projected Employment

$$p = c \cdot g$$
$$g = j/k$$

Calculate Self Employed

d - Difference between base and projected years
S_b – SE Base Year Ratio
S_p – SE Projected Year (10-Year) Ratio
n – National Basis Year of Ratios
b – Base Year
p – Projected Year
e_{bi} – Base year estimate of employment for one occupation across industries (excluding other SE occupational totals)
e_{pi} – Projected year employment for one occupation across all industries (excluding other SE occupational totals)

SE Base Year Estimate $= [S_b + ((S_p - S_b)/10 \cdot (b - n)] \cdot e_{bl}$
SE Projected Year Estimate $= [S_p + ((S_p - S_b)/10) \cdot (p - n)] \cdot e_{pi}$

Coefficient Estimates

Coefficient Estimates are statistical estimates taken from a sample designed to approximate the true regression coefficients of the populations. The difference between estimated and true coefficients is the bias.

With OLS Models, Coefficient Estimates can be viewed as the slope and intercept of the "best fitting" linear relationship between the independent and the dependent variables. The slope can also be interpreted as the marginal effect of Independent Variable on the *dependent variable*. The intercept has no ready interpretation because it corresponds to the mean of the dependent variable when the Independent Variable is zero and captures the average effects of omitted variables.

Coefficient Estimates in Exponential Smoothing, *ARMA*, and *VAR* are somewhat less amenable to direct interpretation; however, estimates in these models do relate different types of past information as predictors of the dependent time series.

Correct for Serial Correlation

When this option is selected, the dependent and independent variables are processed through the Hildreth-Lu algorithm to create a set of differenced series. The regression equation is modified by the Hildreth-Lu calculation result referred to as the Rho value. This is a number between zero and one.

Degrees of Freedom

Degrees of Freedom is the difference between the Number of Observations and the number of Independent Variables minus one. Statistical inferences tend to be more reliable when the Number of Observations is large relative to the number of inferences attempted. When evaluating a regression equation, for example, we subtract the number of Coefficient Estimates (k) from the Number of Observations (n) to obtain the Degrees of Freedom (n - k). This value is a meaningful component in determining the Level of Significance for associated statistical tests.

The addition of new variables in the projection model may increase the overall quality of the goodness of fit (Adjusted R-Squared), but would decrease the Degrees of Freedom. As the number of the Degrees of Freedom declines, the estimates tend to be less reliable.

Durbin-Watson Statistic

A test statistic for first-degree autocorrelation; the condition of autocorrelation is present when current Residuals are not independent of past Residuals. In this case, the diagnostic statistics will tend to overstate reliability of the model. Projections will not be robust to changes in the end of the Sample Period; therefore, the results of projection evaluation activities are likely to be misleading.

The Durbin-Watson Statistic ranges from 0 to 4. A value significantly different from 2 indicates that the Residuals from an estimated regression equation are not independent over time. A test statistic value that approaches 2 suggests the absence of a first-order autocorrelation. A DW statistic < 1.5 indicates significant positive correlation. A DW statistic > 2.5 indicates significant negative correlation.

ETA

The Employment & Training Administration (ETA) is part of the U.S. Department of Labor. Its mission is to provide training, employment, labor market information, and income maintenance services.

Exponential Smoothing

Exponential Smoothing is a trend technique that reduces the short-term volatility of the series (see Trend Models). Exponential Smoothing is a trend technique that reduces the short-term volatility of the series (See *Trend Models*). The new series is obtained as a weighted average of current and previous values with geometrically declining weights in a smoothing method. The more recent values receive greater weight.

Exponential Smoothing uses an adaptive trend approach to projecting in which the model's parameters are updated explicitly throughout the Sample Period. Initial settings for the smoothed level (S), trend (T), and seasonal (I) components are taken from the linear trend model estimates. The three components are adjusted with each successive observation in response to the difference between the one step ahead prediction ($Y(t+1)$) and the actual value.

$$alpha = \mu$$
$$delta = D$$
$$gamma = g$$
$$Y\ (t+1) = S\ (t) + I\ (t+1-1)$$
$$S\ (t) = S(t-1) + T\ (t-1) + \mu \cdot e\ (t)$$
$$T\ (t) = T\ (t-1) + \mu \cdot g \cdot e\ (t)$$
$$I\ (t) + I\ (t-12) + (1-\mu) \cdot D \cdot e\ (t)$$

Smoothing parameters (alpha, gamma, and delta) determine the degree to which the level, trend, and seasonal components adapt to new information. Parameter values range from zero to one. Low values describe a path, which is unresponsive to the latest observation. The Random Walk model represents a special case where the parameter for level equals 1 and the parameters for trend and seasonal equal 0.

The system provides estimates for the smoothing parameters. The Optimization Process searches over values from 0.1 to 0.9 for all three parameters to identify the combination that minimizes the sum of squared Residuals.

F-Statistic

The F-Statistic is computed to test the hypothesis that the regression equation has at least one nonzero coefficient. Thus, it tests for the overall goodness-of-fit of an equation. The F-Statistic is represented by the ratio of the explained sum of squares to the residual sum of squares, adjusted for the number of Independent Variables and the Number of Observations in the sample.

The following steps are necessary to perform an F-test:

1. Estimate forecasting model and obtain the coefficients to be tested.
2. Compute F-Statistics, Fc.
3. Determine the Degrees of Freedom.
4. Derive a critical value for the F-Statistic, F*, considering the chosen Level of Significance and the Degrees of Freedom. As a general rule, the significance level should be .05 or less.
5. Set and test the null (Ho= each of the regression coefficients is equal to zero and alternative (Ha= at least one of the regression coefficients is nonzero)) hypotheses:

Decision Rule:

1. If Fc is greater than F*, then the null hypothesis is rejected. Under this condition, at least one of the regression coefficients is statistically significant from zero and the model surpasses the goodness-of-fit test.
2. If the null hypothesis cannot be rejected (Fc is less than F*), then each of the regression coefficients is equal to zero. The model fails to surpass the goodness-of-fit test.

Fitted Values

Fitted Values represent values for the dependent variable over the historical Sample Period which are implied (predicted) by the statistical model. Fitted Values are obtained by applying the Coefficient Estimates to the set of Independent Variables.

Forecast Errors

Forecast Errors are the difference between Forecast Values and actual values for the *dependent variable* over the Forecast Period. One of the primary criteria in selecting a forecasting model is to minimize Forecast Errors. An experimental Forecast Period can be defined that begins within the range of historical data to provide an evaluation of alternative models based on forecast performance. Inspection of individual Forecast Errors, calculation of summary measures (such as Mean Absolute Percentage Error), and viewing Forecast Values against actual values in a graph are all useful exercises for this purpose. The model with smaller forecasts errors would be a better forecasting model. However, Forecast Errors cannot be determined when the entire Forecast Period is beyond the range of available historical data.

Forecast Values for VAR models must be derived one period at a time to provide the required Lagged Values of the dependent variable. With Trend Models and ARMA models, Forecast Values represent an extended pattern of univariate time series behavior. Trend forecasts are deterministic in the sense that they do not respond to information revealed during the Forecast Period. In contrast, ARMA forecasts must be derived one-step at a time to incorporate early Forecast Errors in constructing Forecast Values for subsequent periods.

Forecast Period

The Forecast Period is the period of time over which Forecast Values are produced. The Forecast Period includes the eight quarters immediately following the end of specified Sample Period. Historical observations for evaluation of Forecast Errors will be available if the Forecast Period begins within the range of available data; however, final employment forecasts extend eight quarters past the last available historical observation (see Step 1, Step 2, Step 3). The Forecast Period is the frame of reference for all of the information presented in the "results" section of select industry forecasts.

Forecast Values

Typically, Forecast Values represent values for the dependent variable over the Forecast Period, which are implied (predicted) by the statistical model. With OLS Models, Forecast Values are obtained by applying the Coefficient Estimates to the associated set of Independent Variables. Independent Variable Forecasts are required when the Forecast Period extends beyond the range of available historical data. Forecast Errors can only be calculated when the Forecast Period begins within the range of available historical data.

Forecast Values for VAR Models must be derived one period at a time to provide the required Lagged Values of the dependent variable. With Trend Models and ARMA Models, Forecast Values represent an extended pattern of univariate time series behavior. Trend forecasts are "deterministic" in the sense that they do not respond to information revealed during the Forecast Period. In contrast, ARMA forecasts must be derived one-step at a time to incorporate early *Forecast Errors* in constructing Forecast Values for subsequent periods.

Granger Causality

Correlation between two variables is a statistical relationship, which does not necessarily indicate a meaningful behavioral relationship, that is, causation. For example, a finding that weekly birth rates in coastal villages are correlated with the arrival of migrating storks does not prove that storks bring (or cause) babies.

Granger Causality is a technique for determining whether one time series is useful in forecasting another. Typically, regressions simply reflect correlations, or associations. A time series is said to “Granger-cause” another time series, if the

Lagged Values provide statistically significant information on the future value of a second time series. The test for statistical significance is the F-statistic. However, Granger Causality is not sufficient to prove a causal relationship between two variables.

The predictive contribution of each Independent Variable is assessed in all VAR Models and BVAR Models using the Sims alternative form of Granger Causality test. The "unrestricted" vector Autoregression is performed with the entire set of explanatory variables, including Lagged Values of employment and all Independent Variable. Lagged Values of one Independent Variable are excluded when forming the "restricted" equation. An F-statistic compares the residual sum of squares from each equation to determine if the restricted form has significantly less explanatory power. If so, then past values of the excluded variable contribute to the explanation of current employment. The reported test statistic has Degrees of Freedom equal to the Number of Observations divided by the difference between observations and Independent Variable in the unrestricted equation.

Growth Rate Calculation

Short Term Industry Projections: Growth Rate Calculation and Display.

Module	Year-Over-Year Growth	Compounded Annual Growth
Pre-projections Preview Employment	Quarterly	24 months
Pre-projections Preview Variables		24 months
Projections Leading Index		Eight quarters
Projections Single Region		
Projections Multiple Regions Analyze Industry Tab		Eight quarters
Projections Multiple Regions Area View Tab		Eight quarters
Projections View Projections		Eight quarters
Output Final Reports		Eight quarters

Figure 1: Growth Rate Calculations

Historical Fit

The Adjusted R-Squared is a measure of the goodness of fit with each regression equation. Intuitively, in the Leading Index module of STIP, this refers to the proportion of total variation in state employment, which can be explained by each set of Leading Indicators. Historical Fit is displayed for each indicator variable individually and in combination with others. Separate OLS regressions are evaluated for each row of information using the two- and four-period equations.

Import Models

Import models work best for import oriented industries. Import oriented industries are industries that do not have enough workers in the area compared with other areas. Workers are coming into the area to find work.

Import models use the Vocational Quotient:

% of workers in an industry in an area

% of workers in an industry in the nation

When the Vocational Quotient for the industry is below 1.2, it is considered an import oriented industry.

Export Models

Export models work best for export oriented industries. Export oriented industries are industries that have a surplus of workers in the area compared with other areas. Workers are leaving the area to find work.

Export models use the Vocational Quotient:

% of workers in an industry in an area

% of workers in an industry in the nation

When the Vocational Quotient for the industry is above 1.2, it is considered an export oriented industry.

Independent Variable

An independent (or explanatory variable) is one whose values are determined outside the system being modeled. In the OLS model, Independent Variables are used in an implied causal relationship to explain and predict the values of a dependent

variable. The choice of Independent Variables is usually based on economic theory, past experience, or intuitive judgment.

Consider the proposition that monthly ice cream sales (measured in scoops sold) at Rosie's Ice Cream Parlor are influenced by the average monthly temperature, the price per scoop, the number of flavors, monthly ticket sales at the nearby movie theater, and Rosie's advertising budget. In a regression equation to explain or predict ice cream sales, “monthly scoops" constitutes the dependent variable while all of the potential influences would be Independent Variables. These "explanatory variables" appear on the right hand side in a conventional *OLS model*. In the short-term forecasts system, OLS models can include Leading Indicators, Related Industries, or a user-selected combination of Independent Variables.

Independent Variable Forecast

The traditional practice of forecasting with OLS models requires Forecast Period values for all explanatory variable series. These Independent Variable forecasts can be taken from external sources as a user-defined option.

A problem arises in that final industry employment forecasts depend on Independent Variable Forecasts while the within-sample industry employment forecast experiments are based on actual data. For OLS models that are sensitive to the accuracy of explanatory variables the forecast evaluation statistics promote a misleading sense of confidence. Independent Variable Forecasts cannot be as accurate as the actual data; however, this source of error is not revealed in the experiments, which inform model selection.

The system generates Independent Variable Forecasts internally. This improves the reliability of forecast evaluation and reduces data requirements. Internal forecasts for each explanatory variable are produced by a second order VAR model, which includes industry employment and the user-defined set of explanatory variables.

Lagged Values

Instantaneous relationships between dependent and Independent Variables do not exist in all economic situations. Therefore, it is frequently useful in time-series forecasting to allow for the possibility that the dependent variable is related to Lagged Values of itself or other variables. The lag is the number of time periods by which the lagged variable is

offset from the variable being forecast. This is particularly important when the units of time are small, such as months.

Leading Indicators are chosen based on their contribution to prediction of future employment. Therefore, past values (Lagged Values) of indicator variable series should serve as a useful source of information on current employment. *VAR Models* are based on this assumption. Lagged Values of the dependent variable series influence current employment movements in ARMA, VAR and BVAR models.

Leading Indicators

The basic goal of the leading indicator exercise is to identify a small but effective set of explanatory variables that serve as state-specific predictors of future employment changes. These indicator variables will be used extensively in the formation of industry forecasting models.

Quarterly data is employed in all of the identify Leading Indicators analysis. Two and four quarter leading relationships are explored between the current values of potential explanatory variables and future statewide employment. OLS Models are estimated with each indicator separately and in combination with others. Summary measures of Historical Fit and Turning Point Accuracy throughout the Sample Period are presented. Relative individual performance as well as combined effectiveness should be used to determine candidates for inclusion.

Level of Significance

Level of Significance is designated by the Greek letter “alpha” and is sometimes called the level of risk because it is the risk one takes of rejecting the null hypothesis when it is really true. It measures the amount of Type I error (rejecting a true null hypothesis) implied by a particular critical value.

Linear Trend

Linear Trend fits a least squares, or OLS, regression line to the data. This becomes the trend line you are going to use in forecasting. The Linear Trend also models seasonality. It takes into account what the impact of the change in seasons from month to month has on historical data. You will utilize regression to forecast the future and

apply standard statistical diagnostics to the variable coefficients, such as standard errors, t-statistics, and t-probabilities, to evaluate the model.

Log Likelihood

The joint probability density function of actual values expressed in terms of model parameters is called the likelihood function. Log Likelihood refers to the value taken by the likelihood function for a particular set of parameter values. The reported Log Likelihood value for a given model is associated with the set of reported Coefficient Estimates.

Likelihood ratio tests offer a convenient method for evaluation of alternative model specifications that can be expressed in terms of parameter restrictions. The test statistic is based on relative Log Likelihood values between restricted and unrestricted versions of the model.

Throughout the short term industry forecasts system Coefficient Estimates are selected that minimize the Sum of Squared Residuals. In most cases this objective is equivalent to maximum likelihood estimation.

Long Run Drift

Adding a constant linear trend to a Random Walk process produces a Random Walk with drift. Forecasts based on this specification will follow a long term trend (d) with the most recent observation $Y(t-1)$ as a starting point.

$$Y(t) = Y(t-1) + d + e(t)$$

Substitution of the industry employment growth pattern from long term forecasts yields a meaningful combination of short term information and long term analysis.

Mean Absolute Percentage Error (MAPE)

Mean Absolute Percentage Errors is a summary measure of forecast error. This forecast evaluation statistic is based on the difference between predicted values and

actual values over the Forecast Period. **The smaller the MAPE value, the better the forecasting model**.

In the STIP system, MAPE is estimated for a forecast horizon from a three-step calculation:

1. The forecast error in each quarter of the forecast horizon is expressed as a percentage
2. Each percentage is converted to an absolute value; and,
3. An arithmetic mean is derived from the quarterly absolute values.

MAPE is displayed in the Project Single Region module and is useful in the evaluation of alternative forecast models. MAPE also appears in the View Past Performance module to provide a standardized evaluation of the preceding round's employment forecasts with more recent employment patterns.

Mean of Zero

This set of assumptions, if applied strictly, would define each seasonally differenced time series as a Random Walk. An ARMA(1,0) model requires that the first estimated coefficient be less than one. The other parameters in a standard VAR model may not be equal to zero.

Mix Method

Mix forecast that reflects a performance-weighted combination of the univariate and multivariate models.

Mix Models

Alternative forecasting approaches offer different insights to future patterns of employment growth. Mix Models combine information from a variety of methods to form a consensus forecast. In the system you are provided with a performance-weighted mix based on five different types of models.

Mix model forecasts are a weighted average of forecasts from other models. The weights applied to each of the displayed models are calculated using relative values of the Mean Absolute Percentage Error (MAPE). Mix model weights are updated as you conduct experiments with different Sample Periods.

Weights in Step 1 reflect a full eight quarters of forecast evaluation. The same models are re-estimated in Step 2 using a Sample Period with additional recent observations (see Step 1, Step 2, Step 3). However, MAPE values in Step 2 are based on only four quarters of information on Forecast Errors. Mix model weights from Step 1 are updated with the new set of relative MAPE outcomes. The resulting mix model weights combine two parts of Step 1 performance with one part of Step 2 performance. In Step 3, we do not produce Forecast Errors to update the weights again. The mix model forecasts in Step 3 are based on the same weights that were employed in Step 2.

Monthly, Quarterly, Annual

All data series provided to the system must be available on a monthly basis and should be entered without Seasonal Adjustments. The industry employment series and outlook variable series preview modules offer data exploration and editing features for monthly data. The statistical procedures for short term industry forecasts require monthly data to maximize Degrees of Freedom. Monthly observations of data series in annually differenced form are used in many of the estimation procedures to control for seasonal elements (see Seasonal Adjustment).

For presentation purposes, all of the modules related to industry employment forecasts (report card of past performance, select forecasting models, and view industry forecasts) display quarterly outcomes. Implied annual growth rates over the eight quarter Forecast Period are also reported. Quarterly averages are employed throughout the identify Leading Indicators exercise. All of the required data transformations have been automated.

Moving Average Process

Moving Average Process is a form of regression where a dependent variable is associated with the past values of the error term (residual). In a moving average, as each new observation becomes available, a new average is computed that includes the most recently observed value and excludes the oldest value previously used.

Under a Moving Average Process, each observation deviates from a time-invariant mean (d_y) by a weighted average of past errors or disturbances. An MA(q) process will exhibit a "memory" of q periods as opposed to the greater degree of persistence in an autoregressive process. The subtraction operation in the MA equation connotes a decay effect between the current period and the q prior periods. With an MA(2) process, for example,

$$Y(t) = d_y + e_y(t) - g_1 e_y(t-1) - g_2 e_y(t-2)$$

the current value of the Y time series is influenced by the errors (Residuals) from the present (t) and each of the two prior periods (t-1 and t-2). The moving average model parameters (g_1 and g_2) may assume either a positive or negative value. The "memory" of the MA(2) stochastic process is two periods.

$$Y(t) = d_y + e_y(t) - g_1 e_y(t-1)$$

With an MA(1) process, the one period ahead forecast will be influenced by the errors (Residuals) from the present (t) and most recent past (t-1); however, Forecast Values will quickly tend to the constant series mean. MA(q) forecasts can be generated by selecting ARMA Models without an autoregressive component: ARMA(0,1), ARMA(0,2).

Multivariate Methods

The multivariate regression method gives you a basis to explain what has happened in the past and to show what forces drive jobs in different industries in a particular state or region. It also allows you to create *what if* simulations about the past and the future.

Models you can use are:

- OLS
- VAR
- BVAR

NAICS

The North American Industry Classification Systems (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the United States' business economy.

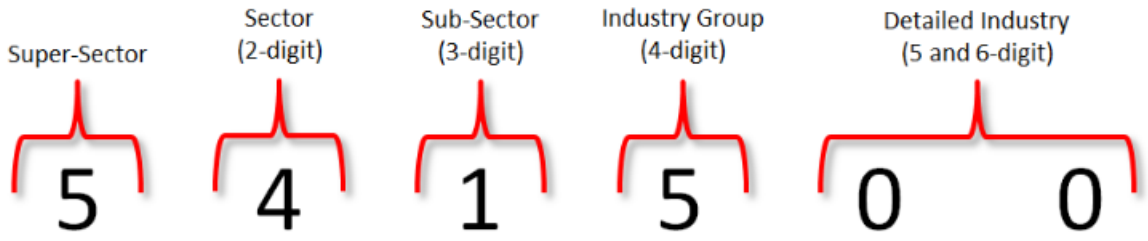


Figure 1: NAICS code designations

View the NAICS Manual (links to census.gov) for additional information on the system.

Nonlinear Function

A nonlinear function has a slope that changes value when its dependent variable changes (i.e., the slope is not constant). This describes ARMA models with moving average terms as well as Exponential Smoothing.

Number of Observations

In most forecasting models, the Number of Observations is simply the total number of monthly values in the Sample Period. In those models that include Lagged Values (ARMA, VAR and BVAR), we lose a few of the sample observations to construct the explanatory variable series. In these cases, the Number of Observations reported will be less than the full Sample Period. The Number of Observations is displayed in "details" reports to help you determine Degrees of Freedom associated with statistical tests.

Occupational Separations

The separation methodology differs from the replacements methodology in that it incorporates the projections results. While replacement needs were calculated using only base year data for each occupation, separations require both base year and projected year data. That means separations cannot be calculated until occupational projections are finalized.

To calculate separations, the rates are applied to the midpoint of base and projected employment:

$$\text{Emp}_{mid} = \frac{Emp_{base} + Emp_{proj}}{2}$$

The calculation of midpoint employment is the same regardless of the projections length: 10, 9, or 2 year projections.

Once midpoint employment is calculated, annual average separations are simply the product of midpoint employment and the rate:

$$\text{Occupational Transfers} = Emp_{mid} \cdot OTRATE$$

$$\text{Labor Force Exits} = Emp_{mid} \cdot LFRATE$$

$$\text{Occupational Separations} = \text{Occupational Transfers} + \text{Labor Force Exits}$$

Once occupational separations have been calculated, they can be used to calculate annual openings. Separations differ from replacement needs in that they do not take into account declines in occupational employment, so while annual openings used to be calculated using different methods for declining versus growing occupations, there is a single calculation for all occupations:

$$\text{Annual Average Openings} = \text{Annual Average Separations} + \text{Annual Average Employment}$$

OLS Correction for Serial Correlation

The Ordinary Least Squares (OLS) model uses a set of predictor variables to "explain" a single predicted variable. In the Short-Term Industry Projections (STIP) software, the range of predictor variables includes economic indicators, Related Industries, or a combination of both indicators and Related Industries. The single predicted variable in STIP is employment in an industry.

OLS models can produce unbiased results when a pattern emerges in the residual term. This pattern is described as a serial correlation of the errors and occurs when the predicted value for employment in an industry systematically overestimates or underestimates the actual employment value in the historical series. The Durbin-Watson Statistic is a summary measure for serial correlation in the STIP software. A value that approximates 2 indicates the relative absence of serial correlation; thus, successive error terms (the difference between the predicted and actual values for industry employment) are randomly distributed. A lower value for the Durbin-Watson Statistic, especially below 1.5, suggests the presence of positive serial correlation: successive error terms are close in value to one another. A higher value for the Durbin-Watson Statistic, especially above 2.5, suggests the presence of negative serial correlation: successive error terms are much different in value to one another.

Several statistical approaches exist to reduce the severity of serial correlation in OLS Models to enhance forecast reliability. Short Term Industry Projections uses a modification of Cochrane-Orcutt, while Long Term Industry Projections uses a modified combination of Cochrane-Orcutt and Hildreth-Lu. In brief, this approach adjusts the OLS model to include the unexplained error.

These are the steps.

1. Calculates an error adjustment weight based on the Durbin-Watson Statistic (weight = (1 - (DW Stat/2)).

2. Uses a form of quasi-differencing between the original OLS equation and an equation whereby the error weight is applied to the prior period value of each variable. The OLS routine is run against the quasi-differenced equation to yield an array of fitted industry employment values for the predicted variable that have been adjusted for serial correlation (IND238(t)**).

3. Computes the OLS model using the original predictor variables and an adjusted industry employment variable (IND238(t)**) that captures some

magnitude of the initial serial correlation. The forecasts for industry employment from Step 3 should reflect an improvement in the Durbin-Watson Statistic. To the extent that the coefficients for the initial predictor variables are statistically non-significant, then the OLS assumes the properties of a first order moving average model (MA(1)).

Step 1

Equation 1

$$IND238_{(t)} = C + \beta_1 X_{1(t)} + \beta_2 X_{2(t)} + \cup_{(t)}$$

where:

$$X_1 = interest\ rate\ spread$$
$$X_2 = money\ supply$$
$$\cup = unexplained\ error$$

where:

$$\cup_{(t)} = \beta_3 \cup_{(t-1)}$$
$$\beta_3 = 1 - (DWStat/2)$$

Run OLS on Equation 1 to generate the Durbin-Watson Statistic for estimation of β_3.

Equation 2

$$IND238_{(t-1)} = C + \beta_1 X_{1(t-1)} + \cup_{(t-1)}$$

Step 2

Equation 3 (quasi-differenced): multiply Equation 2 by β_3 and subtract from Equation 1.

$$(IND238_{(t)} - \beta_3 IND238_{(t-1)}) = (1-\beta_3)C + \beta_1(X_{1(t)} - (\beta_3 X_{1(t-1)}) + \beta_2(X_{2(t)} - (\beta_3 X_{2(t-1)}))$$

Run OLS on Equation 3.

Save fitted and forecasted values from quasi-differenced variables.

Convert fitted and forecasted values back to original format.

$$IND238_{(t)} ** = (IND238_{(t)} - \beta_3 IND238_{(t-1)}) + \beta_3 IND238_{(t-1)}$$

Step 3

Equation 4

$$IND238_{(t)} = C + \beta_1 X_{1(t)} + \beta_2 X_{2(t)} + \beta_4 IND238_{(t)} * *$$

Run OLS on Equation 4 (includes correction for serial correlation) to estimate summary statistical results and detailed statistical results for each variable. These results can be compared to those estimated on the basis of Equation 1.

OLS Models

Ordinary Least Squares (OLS) regression generates Coefficient Estimates which minimize the sum of squared Residuals throughout the Sample Period. Because Residuals are the differences between the actual and the estimated values of the dependent variable, it would be true to say that OLS procedure minimizes these summed squared differences. Thus, the estimated model provides the best linear unbiased estimate or prediction of the historical series of dependent variable.

Single equation OLS regression, used extensively in the development of long term employment forecasts, is also an option for short term analysis. The primary appeal of this method involves intuitive interpretation of results. Observed changes in the dependent variable (Y) over time are attributed, through a linear relationship,

$$Y(t) = b_0 + b_1 x_1(t) + b_2 x_2(t) + b_3 x_3(t) + e_y(t)$$

to the behavior of explanatory variables (X_1, X_2, X_3) and purely random disturbances. The OLS regression procedure generates Coefficient Estimates, which minimize the sum of squared Residuals throughout the Sample Period. Thus, the estimated model provides the best linear prediction of the historical employment series.

Reliability of the estimated model over the Sample Period can be evaluated with the assistance of several diagnostic statistics (or "details"). These provide information on the estimated coefficients of the model (t-statistics, standard errors), Historical Fit (R-Squared), and autocorrelation of Residuals (Durbin-Watson statistic).

Employment forecasts are related to Forecast Period values of the Independent Variables. To the extent that explanatory variables are common across industry models, the Independent Variable Forecasts may constitute a shared scenario for

interpretation. You can restrict the Sample Period to define a Forecast Period, which includes some actual employment values. In this case, Forecast Errors and the Mean Absolute Percentage Error are displayed for the purpose of forecast evaluation.

The forecasting system provides a family of OLS Models with different sets of explanatory variables. "Indicators" refers to a preset regression model based on the set of Leading Indicators that you have already identified. The "Industries" option calls for a preset regression model based on Related Industries. Leading Indicators and Related Industries are combined to form the set of Independent Variables in the "full" option. With the "User" option you can define industry-specific OLS Models based on a more extensive set of explanatory variable combinations.

OLS is based on several assumptions regarding the Residuals (errors):

1. The average value equals zero.
2. They are independent of each other (not correlated).
3. Their variance is constant, which means that their standard deviation is zero.
4. They are normally distributed.

Optimization Process

The goal is to identify Coefficient Estimates that minimize the Sum of Squared Residuals. When the solution to this problem is linear in the model parameters, we can develop equations that yield a unique solution. Where the solution is nonlinear in parameters, an alternative solution process is required. A variety of numerical optimization approaches that could be applied are described by Hamilton (1994). In general, all of these procedures involve a search for parameter values that work best. Different combinations are considered, the resulting model predictions are calculated, and objective function values are compared. Prohibitive computational requirements of an exhaustive search represent a fundamental challenge.

Consider the search for a fugitive in which trained bloodhounds are released in a likely location. The hounds sniff for a strong scent to establish a search direction and follow the fugitive's trail as long as the scent grows stronger. An experienced trainer (or a wise old dog) will pause frequently to identify and respond to changes in direction. Our sequential search process works in much the same way. From a given starting position, we evaluate partial derivatives of the objective function to determine the best direction for search. That is, we identify the combination of very small parameter changes that is most effective in reducing Residuals. The search moves a limited number of steps in that direction as long as the Sum of Squared Residuals continues to decline. We pause

frequently to reevaluate partial derivatives and continue the process until all potential gains from search are exhausted.

Starting values matter. If you release the dogs in the wrong neighborhood, it will take a long time before they corner the fugitive. Bloodhounds have also been known to follow a trail left by a person or creature that is not the fugitive. Search procedures may be prone to find local solutions that are not global solutions. It is usually advisable to experiment with alternative starting values. We begin with a grid search for this purpose. For starting ARMA estimates the routine searches across the full range of legitimate parameter combinations with refined precision near zero to account for scaling differences. A second pass applies a finer grid to establish precise starting values. The sequential Optimization Process, which follows, is not restricted by the initial grid pattern but begins with reasonable assurance that all "neighborhoods" have been investigated.

P-Value and the Test for Significance

The significance test can be carried out using a p-value approach. P-value is the probability of obtaining a value of the t-statistic at least as large in absolute value as the one actually obtained. A low p-value means a small probability of Type I error (rejecting a true hypothesis). A high value of p means a large probability of Type I error.

The following steps are necessary to test hypotheses using p-value(s):

1. Estimate a regression equation.
2. Specify a Level of Significance (e. g. a = 0.05; 0.01). As a general rule, the significance level should be .05 or less.
3. Calculate p-value(s).
4. Set and test the null (Ho= p-value is greater than the selected significance level) and alternative (Ha= p-value is less than the selected significance level) hypotheses.

Decision rule:

1. If the p-value is less than the selected significance level, then the null hypothesis is rejected. Under this condition, the tested coefficient is statistically significant.

2. If the null hypothesis cannot be rejected (p-value is less than the selected significance level), then the tested coefficient is not statistically significant.

The p-value method is equivalent to the t-test for the significance of the individual explanatory variables. The p-value approach may also be used to test for the overall significance of a regression model. A different p-value would be used.

Pre-Projections - Preview Employment

1. Compounded annual growth rate for industry (j)

$$= ROUND\ ((((\frac{X_{i(t)}}{X_{i(t-24)}})\frac{1}{2}) - 1) \cdot 100), 2)$$

Where:

$X_i(t) =$ Employment level for industry (j) at month (t)
$X_{i(t-24)} =$ Employment level for industry (j) at month (t-24)
Exponent $\frac{1}{2} =$ denominator represents the span of years

Pre-projections - Preview Variables

1. Compounded annual growth rate for variable (j)

$$= ROUND((((\frac{X_{i(t)}}{X_{i(t-8)}})\frac{1}{2}) - 1) \cdot 100), 2)$$

Where:

$X_i(t) =$ Employment level for variable (j) at month (t)
$X_{i(t-24)} =$ Employment level for variable (j) at month (t-24)
Exponent $\frac{1}{2} =$ denominator represents the span of years

The compounded annual growth rate (2 year) is used in the place of the year-over-year growth rate because the project single region and multiple region forecast results are reported as the former. The use of the compounded formula establishes consistency between the diagnostic work done by the analyst in the pre-projections module (both the employment and variables) and the analyst decision on selection of a projection in the single region and multiple region modules.

The implementation of the compounded formula in STIP also establishes consistency with the LTIP, which uses a compounded rate in its projections results. The importance of the consistent measurement of projections between the LTIP and the STIP is heightened as users often compare the sets of results and, moreover, the results are

used in the Occupational Projections software, i.e., users often compare the occupational employment projections for the two horizons.

Projections - Leading Index

1. Year-over-year quarterly growth rate for industry (j) for actual

$$= ROUND\ ((((\frac{X_{i(t)}}{X_{i(t-4)}})\frac{1}{1}) - 1) \cdot 100), 2)$$

Where:

$X_i(t) =$ Actual employment level for industry (j) at quarter (t)
$X_{i(t-24)} =$ Actual employment level for industry (j) at quarter (t-4)
Exponent $\frac{1}{1} =$ denominator represents the span of years

2. Year-over-year quarterly growth rate for industry (j) for 2Q lead

$$= ROUND\ ((((\frac{X_{i(t)}}{X_{i(t-4)}})\frac{1}{1}) - 1) \cdot 100), 2)$$

Where:

$X_{i(t)} =$ 2Q lead employment level for industry (j) at quarter (t)
$X_{i(t-4)} =$ 2Q lead employment level for industry (j) at quarter (t-4)
Exponent $\frac{1}{1} =$ denominator represents the span of years

3. Year-over-year quarterly growth rate for industry (j) for 4Q lead

$$= ROUND\ ((((\frac{X_{i(t)}}{X_{i(t-4)}})\frac{1}{1}) - 1) \cdot 100), 2)$$

Where:

$X_{i(t)} =$ 4Q lead employment level for industry (j) at quarter (t)
$X_{i(t-4)} =$ 4Q lead employment level for industry (j) at quarter (t-4)
Exponent $\frac{1}{1} =$ denominator represents the span of years

The Leading Index module uses a year-over-year quarterly growth rate formula and not a 2-year compounded annual growth, as is the case in every other STIP module. The calculation of the Leading Index occurs in the C-library and its algorithms, including the determination of turning points, are predicated on year-over-year estimation. The changes in the other modules dealt with the display of the forecast results. If the display in the Leading Index is changed, then the designation of turning points (that occur within the C-library based on the year-over-year estimation) would not be consistent with the display of turning points (two-year compounded growth).

Project Single Region - Results tab

1. Compounded annual growth rate for industry (j)

$$= ROUND\ ((((\frac{X_{i(t)}}{X_{i(t-8)}})\frac{1}{2}) - 1) \cdot 100), 2)$$

Where:

$X_{i(t)}$ = Final projected employment level for industry (j) at quarter (t)
$X_{i(t-8)}$ = Final actual employment level for industry (j) at quarter (t-8)
Exponent $\frac{1}{2}$ = denominator represents the span of years

Project Multiple Regions - Analyze Industry tab

1. Compounded annual growth rate for industry (j) in areas (m, n, o, ...) by quarter

$$= ROUND\ ((((\frac{X_{i(t)}}{X_{i(t-8)}})\frac{1}{2}) - 1) \cdot 100), 2)$$

Where:

$X_{i(t)}$ = Final projected employment level for industry (j) at quarter (t)
$X_{i(t-8)}$ = Final actual employment level for industry (j) at quarter (t-8)
Exponent $\frac{1}{2}$ = denominator represents the span of years

Project Multiple Regions - Area View tab

1. Compounded annual growth rate for industry (j, k, l, ...) in area (m) by quarter

$$= ROUND\ ((((\frac{X_{i(t)}}{X_{i(t-8)}})\frac{1}{2}) - 1) \cdot 100), 2)$$

Where:

$X_{i(t)}$ = Final projected employment level for industry (j) at quarter (t)
$X_{i(t-8)}$ = Final actual employment level for industry (j) at quarter (t-8)
Exponent $\frac{1}{2}$ = denominator represents the span of years

The average annual growth rate was replaced by the compounded annual growth rate (2 year) in both the project single region and multiple region forecast results. The use of the compounded formula establishes consistency between the diagnostic work done by the analyst in the pre-projections module and the analyst decision on selection of a projection in the single region and multiple region modules.

Projections - View Projections (Statewide and Sub-state Areas)

1. Compounded annual growth rate for industry (j)

$$= ROUND((((\frac{X_{i(t)}}{X_{i(t-8)}})\frac{1}{2}) - 1) \cdot 100), 2)$$

Where:

$X_{i(t)}$ = Final projected employment level for industry (j) at quarter (t)
$X_{i(t-8)}$ = Final actual employment level for industry (j) at quarter (t-8)
Exponent $\frac{1}{2}$ = denominator represents the span of years

The compounded annual growth rate (2 year) is used in the place of the year-over-year growth rate because the project single region and multiple region forecast results are reported as the former. The use of the compounded formula establishes consistency between the diagnostic work done by the analyst in the pre-projections module and the analyst decision on selection of a projection in the single region and multiple region modules.

The implementation of the compounded formula in STIP also establishes consistency with the LTIP, which uses a compounded rate in its projections results. The importance of the consistent measurement of projections between the LTIP and the STIP is heightened as users often compare the sets of results and, moreover, the results are used in the Occupational Projections software, i.e., users often compare the occupational employment projections for the two horizons.

Output - Final Reports (display for both statewide and sub-state areas)

Q-Statistic

This test statistic is presented to determine if any systematic pattern of the Residuals remains after applying a given forecast model. An ideal model for a time series will result in Residuals that are "white noise," that is, completely uncorrelated over time (for a sequence of error terms, each value has a Mean of Zero, a constant variance, and is serially uncorrelated). While the Durbin-Watson statistic relates to a pattern of first-degree autocorrelation, the Q-Statistic is a more general test for autocorrelation, testing whether a group of autocorrelations is significantly different from zero.

The Q-Statistic is based on the series of Residuals from the estimated model. Specifically, the sum of squared autocorrelations among Residuals provides the basis for the test statistic. As displayed, the Q-Statistic is distributed as chi-squared with Degrees of Freedom equal to the Number of Observations minus the number of autocorrelations. For an estimated ARMA, Q has a chi-square distribution.

The STIP system provides the Q-Statistic in the "Details" screen. If this Q-Statistic is less than the critical value of chi-square, as a general rule of thumb below a value of 13, then the model can be considered free from autoregressive and moving average components.

R-Squared

R-Squared measures whether an estimated equation is accurate in explaining the sample observations of the dependent variable over the Sample Period. The more accurate the estimated equation, the closer the estimated dependent variable values would be to the actual dependent variable values. The coefficient of determination, R-Squared, is a measure of the goodness of fit (Historical Fit) of the forecasting model; it estimates the proportion of the variation in the dependent variable explained by the Independent Variables, and is represented by the ratio of the explained sum of squares to the total sum of squares.

R-Squared ranges from 0 to 1. The higher the R-Squared, the better is the overall fit of the estimated equation. R-Squared may be defined as the percentage of the variation of the dependent variable explained by the regression equation.

Although R-Squared is a good measure of fit in a simple regression model, it does not appear the same in a multiple regression. Adding another Independent Variable to an equation is likely to increase the R-Squared, but it would decrease the Degrees of Freedom. Therefore, the Adjusted R-Squared would be a better measure of the goodness of fit when a regression equation contains more than one explanatory variable.

The Adjusted R-Squared relies on Degrees of Freedom to penalize models with a large number of Independent Variables. Thus, a small number of variables are preferred to a large number of variables, which explain the same amount of dependent variable variation.

Random Walk

A simple time series pattern in which the period-to-period change which produces each new observation, Y(t), is a random step uncorrelated to past values or patterns.

$$Y(t) = Y(t-1) + e_y(t)$$

where

$$e_y(t) = Y(t) - Y(t-1)$$

The error term (e) is simply the first difference in successive values of Y. Several macroeconomic time series appear to behave in a manner consistent with a Random Walk process. For the purpose of forecasting, the most recent observation of the dependent variable time series of interest is sufficient. Random Walk model forecasts off a useful standard for evaluation of alternative short run forecasts when the employment series does not exhibit an established pattern of growth or decline.

Related Industries

The multivariate models in the forecasting module use a mixture of macroeconomic indicators and inter-industry relationships. The latter are useful to approximate the dynamic nature of the economy. For example, employment boosts in motor vehicle assembly often lead gains in fabricated metals. Hiring in retail trade, home furnishings lags upturns in construction activity.

The inter-industry relationships delineated in the Related Industries Table are based on the 1997 NAICS (North American Industrial Classification System) and 1987 SIC Correspondence Tables, and expert review. The user has the flexibility to modify the table for describing linkages unique to a state's industry relationships. One or two Related Industries are optimum for the production of forecasts because some of the statistical methods require a large number of Degrees of Freedom.

Residuals (Error Terms)

Residuals, or error terms, are the difference between the actual and Fitted Values of the dependent variable over the Sample Period. Residuals provide an indication of the likely Forecast Errors that the regression would make in a forecasting application. A chart of Residuals is produced for each model in the "details" section of Project Single Region module and for LTIP regression models.

Rounded vs. Un-rounded Data

The recommendation for use of the STIP system is to import un-rounded data. The utilization of rounded data in the forecast process “builds-in” an unnecessary level of error. Typically, BLS (Bureau of Labor Statistics) estimates are rounded to the nearest hundred. An industry forecast in the range of 1% to 2% growth (typical) for an industry with an employment level below 10,000 falls victim to the BLS rounding criterion. Why begin the forecast process with such an impediment?

Sample Period

The set of available historical observations used in the estimation of a statistical model may be the full set of available observations; however, it is often useful to restrict the Sample Period to evaluate Forecast Errors. The Forecast Period begins one period after the conclusion of the Sample Period. You can declare starting and ending points for the Sample Period in a number of system modules (industry employment series, identify Leading Indicators). The analogous ex-post evaluation of Forecast Errors in LTIP is captured in the Theil U statistic. In select industry models, you must identify a starting quarter; however, the ending quarter is determined by your selection of Step 1, Step 2, or Step 3.

The Sample Period is the frame of reference for all of the information presented in the "details" section of select industry forecasts.

Seasonal Adjustment

Forecasters are interested in seasonal fluctuations because:

1. Seasonality is second only to trend forces as the most prominent component of most time series data; and

2. From a short-term perspective, an understanding of seasonal variation is essential since the largest element in period-to-period (month-to-month) fluctuations is seasonal variation.

The STIP system requires monthly data series and it is recommended that all imported data be in the form of not seasonally adjusted levels. Data series and forecast results are presented as unadjusted levels; however, three different approaches to Seasonal Adjustment are employed in model estimation. First, the Random Walk and Long Run Drift models are based strictly on unadjusted levels and, consequently, do not employ any Seasonal Adjustment in forecast estimation.

Second, seasonal effects are estimated explicitly in the linear trend model and Exponential Smoothing models. The former uses a set of monthly dummy variables to estimate seasonal patterns that remain fixed throughout the sample and Forecast Periods. In Exponential Smoothing, the seasonal patterns are updated with each subsequent observation.

The third approach depends on a seasonally differenced monthly series and is used in the ARMA, OLS, VAR, and BVAR model estimation. The system transforms the data series into over-the-year monthly differences. The change in industry employment from April (or September) of one year to April (or September) of the prior year is independent of seasonal patterns. The display of Forecast Values exhibits a seasonal pattern as the forecasted annual changes are simply added to actual values from the last year of the Sample Period.

SOC

The Standard Occupational Classification (SOC) system is a United States government system of classifying occupations. It is used by U.S. federal government agencies collecting occupational data, enabling comparison of occupations across data sets.

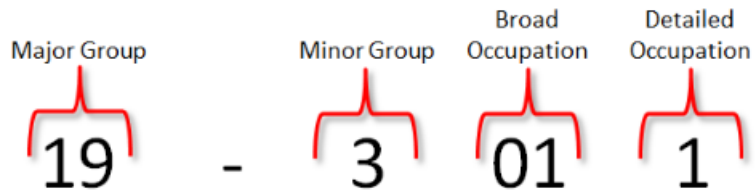


Figure 1: SOC code designations

- The first two digits in a SOC code represent the major group.
- The third digit represents the minor group.
- The fourth and fifth digits represent the broad occupation.
- The sixth digit represents the detailed occupation.

View the SOC Manual (links to bls.gov) for more information on the system.

Standard Errors of Coefficients

The standard errors of the Coefficient Estimates indicate their likely sampling variability and, therefore, their reliability. These estimates vary for each different data set and the standard error of the coefficients is a measure of their variation. The standard error is the square root of the variance of the distribution of the fitted coefficients; therefore, as the standard error increases, the probability for variation among the fitted coefficients increases.

In the STIP and LTIP systems, standard errors measure the statistical reliability of Coefficient Estimates, representing the distribution within which a statistic will fall when samples are obtained from the population. Standard errors of the coefficients are presented for all forecasting models.

Step 1, Step 2, Step 3

Forecast Values can be compared to actual values when the Forecast Period begins within the range of available historical observations. Such "within-sample" experiments provide valuable information on the performance of proposed forecasting models. Run Step 1 and the proposed models are estimated with the last eight quarters of historical data held out of the Sample Period. Results include eight quarters of Forecast Values (period t-7 to base period t) and a corresponding set of eight Forecast Errors for each model.

An ideal forecasting model should remain effective over time. The sensitivity of each model's forecast performance over time can be evaluated by varying the end of Sample Period. Therefore, Step 2 re-estimates the set of proposed models with the Sample Period redefined to include all but the last four quarters of historical data. Results include eight quarters of Forecast Values (period t-3 to t+4) but only four quarters of Forecast Errors (from t-3 to base period t).

The Sample Period in Step 3 is not artificially restricted. Resulting model estimates use data from the complete set of available historical observations ending at the base period. The final set of forecasts extends eight quarters beyond the base (period t+1 to t+8) and there are no Forecast Errors. At the conclusion of this step you are able to save Forecast Values from your choice of models.

Initially, you can either rely on the Tournament to propose models for evaluation or select your own set of alternatives. Individual models within each group can be replaced at any point; however, you will return to Step 1 after any change. As you re-estimate a given set of proposed models under Step 1 and Step 2 you are building a record of relative forecast performance used in Step 3 to select a model.

Sum of Squared Residuals

The Sum of Squared Residuals measures the unexplained variation in the dependent variable based on an estimation of Residuals over the Sample Period. Coefficient Estimates which minimize the Sum of Squared Residuals are determined by ordinary least squares regression or an alternative Optimization Process.

T-Statistic

The T-Statistic tests the hypothesis that a regression coefficient (b1x1, b2x2, b3x3...) has a particular value. The larger the absolute value of the T-Statistic, the better the possibility that the given regression coefficient estimate is significantly different from zero, thus implying that the Independent Variable would have an effect on the dependent variable.

T Test Steps

1. Estimate forecasting model and obtain the coefficients to be tested.
2. Compute T-Statistic, t, (regression coefficient/standard error of the coefficient).
3. Determine the Degrees of Freedom (number of observations minus number of coefficients, including constant term).
4. Derive the critical value(s) for the T-Statistic, t*, considering the chosen significance level and the Degrees of Freedom. As a general rule, the significance level should be .05 or less. (See reference texts for the t distribution table.)
5. Set the test and null (H_o = coefficient equals 0) and the alternative (H_a = coefficient does not equal 0) hypotheses.

Decision Rule

1. If the absolute value of t_c is great than t*, then the null hypothesis is rejected. Under this condition, the regression coefficient (b_1x_1) is statistically significant from zero and the Independent variable (x_1) has an impact on the dependent variable.

2. If the null hypothesis cannot be rejected (the absolute value of t_c is less than t*), then the regression coefficient (b_1x_1) is not statistically significant from zero. The Independent Variable (x_1) does not have an impact on the dependent variable.

Although the T-Statistic is a valuable tool for determining the significance of an individual explanatory variable, it does not allow testing for the overall goodness of fit of a model. The F-Statistic technique or R-Squared should be used to test for the overall goodness of fit of a model.

Theil-U

The Theil-U statistic is an ex post facto test of the predictability of the model. It measures how well the model predicts a certain number of years inside the historical series itself. The default number of years to include is four.

Tournament

This feature resides in the Project Single Region module and offers a set of “best-fit” specifications for each forecast model. You can proceed with these specifications or identify a set of alternatives for evaluation. After the Tournament feature is called, you must repeat Step 1, Step 2, and Step 3 to produce industry forecasts. This is also the case whenever you alter or replace any of the choices in the "models" section.

The Tournament runs all of the available models in the system using the last eight periods of historical data to define the Forecast Period. Mean Absolute Percentage Error values for each model are compared to identify the most effective model in each group. This automated process delivers a set of candidates; however, *you* select the model for industry forecasts. You are encouraged to evaluate models based on several criteria before making your selection.

Trend Models

A set of alternative approaches that project an established pattern of employment growth into the Forecast Period. Differences between the various models in this group reflect the degree to which the most recent observation (as opposed to the entire Sample Period) is used to determine Forecast Values.

Linear Trend:

OLS estimation of a linear trend with seasonal controls. The regression equation includes a constant, a time trend and monthly dummy variables. Forecasts follow a very deterministic path based on series mean, trend and seasonal variations that are assumed to remain consistent throughout the Sample Period. Note that the most recent observation has no more effect on the forecasts than any other observation in the Sample Period.

Exponential Smoothing:

Predicted values for the level, trend and seasonal components are updated with each successive observation. Estimated smoothing parameters determine the degree to which the model responds to new information. The particular framework implemented here can be described as Holt-Winters double Exponential Smoothing with linear trend and additive seasonal.

Random Walk:

Forecasts from this model offer a useful standard for comparison of short term models when the employment series is subject to permanent shocks and growth does not appear to follow a trend. The most recent observation serves as the forecast for future periods.

Long Run Drift:

Forecasts follow a deterministic trend with the most recent observation as a starting point. This model incorporates industry employment growth from long term forecasts to produce a meaningful combination of short term information and long run analysis.

Turning Point Accuracy

One of the ultimate goals in short term forecasting is to accurately predict the timing and magnitude of cyclical fluctuations. Traditional measures of Historical Fit assess overall model performance in terms of residual magnitudes throughout the Sample

Period. Turning Point Accuracy can be evaluated visually by inspecting the behavior of the predicted series at specific points where the actual series changes direction.

In identify Leading Indicators you select explanatory variables for statewide nonagricultural employment on the basis of several criteria. Effectiveness as a source of leading information on turning points should be a key factor. A summary measure of Turning Point Accuracy is provided for each of the leading indicator variables alone and in combination.

Turning points are defined as an increase or decrease in employment preceded by at least four consecutive quarters of movement in the opposite direction. The two or four quarter leading indicator series is said to predict a turn when the predicted series moves in the same direction as the actual series within one quarter of the turning point. The percentage of total upturns and downturns that are predicted in this manner serves as the measure of Turning Point Accuracy.

Univariate Methods

Univariate refers to an expression, equation, function, or polynomial of only one variable.

Methods include:

- Trend
- ARMA

VAR Models

For the purpose of short term forecasting, it may be valuable to identify a set of influences that provide predictive information about our dependent variable even when the precise structure of the economic relationship remains elusive. Vector autoregression (VAR) combines past information from the dependent series and other influences to form the most effective equation for prediction without adopting a host of restrictive behavioral assumptions. In general, these models have proven successful in short term forecasting especially where the dependent variables are potentially interrelated.

A vector autoregression can be represented by a group of equations, sharing a common set of explanatory variables, including Lagged Values, of all dependent

variables. Consider the case of two dependent variables (X, Y) and lag length of two periods (t-1, t-2). A separate equation is specified for each of the variables based on a comprehensive set of lags as follows:

$$X(t) = a_0 + a_1 X(t-1) + a_2 Y(t-1) + a_3 X(t-2) + a_4 Y(t-2) + e_x(t)$$
$$Y(t) = b_0 + b_1 X(t-1) + b_2 Y(t-1) + b_3 X(t-2) + b_4 Y(t-2) + e_y(t)$$

Forecast Values are produced for each of the dependent variables in the VAR system of equations. A sequential process is used in which Forecast Values are generated one period at a time and then used as "inputs" in the next step.

Statistical details associated with VAR are consistent with OLS and ARMA with one exception. Granger Causality tests are performed for the *explanatory variables* in the employment equation.

A variety of VAR Models with different sets of explanatory variables are available in the system. "Indicators" refers to a preset VAR model based on Lagged Values of employment and the set of Leading Indicators that you have already identified. The "Industries" option calls for a preset VAR based on Related Industries. Leading Indicators and Related Industries are combined to form the set of lagged Independent Variables in the "full" option. With the "User" option you can define industry-specific VAR Models based on a more extensive set of explanatory variable combinations and your choice of maximum lag length.

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Glossary

A

ARC: Analyst Resource Center

B

BLS: Bureau of Labor Statistics

BLUE: Best Linear Unbiased Estimates

BOS: Balance of State

D

DBA: Database Administrator

DSU: Database Setup Utility

E

EDS: Estimate Delivery System (replaced by LEWIS)

ETA: Employment and Training Administration

F

FIPS: Federal Information Processing Standard

I

ICT: Industry Control Total

L

LEWIS: Local Employment and Wage Information System

LTIP: Long Term Industry Projections

N

NAICS: North American Industry Classification System

O

OP: Occupational Projections

P

PMP: Projections Managing Partnership

PS: Projections Suite

R

RD: Rounded

S

SE: Self Employed

SIC: Standard Industrial Classification (replaced by NAICS)

SOC: Standard Occupational Classification

SQL: Server Query Language

STIP: Short Term Industry Projections

W

WIA: Workforce Investment/Information Area

WID: Workforce Information Database