# Dataset Editor

## Introduction

The Dataset Editor is used to create new datasets or modify existing ones.

Dataset Editor tools can be used to collectively, or independently, create and edit coverage/layer features such as polygons and points, and descriptive data. They are also used to perform feature-oriented editing, display coverages/ layers, establish environments to control editing and snapping, and to manipulate and analyze data.

This section covers information and instructions for:

- Creating a new vector coverage

- Setting up the dataset editor before editing coverages

- Adding lines

- Modifying nodes and dangles

- Working with polygons

For more detailed information, see *Chapter 4, Dataset Editor.*
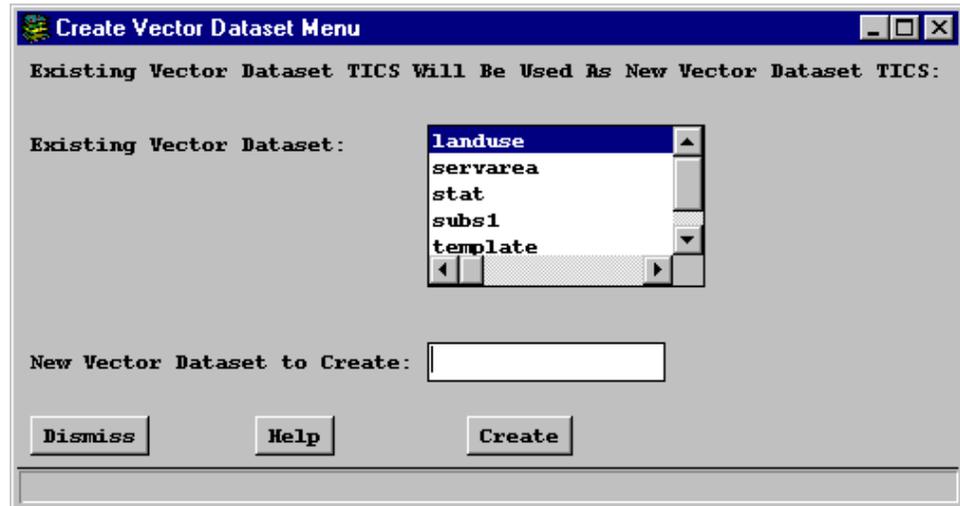
## Creating a New Vector Coverage

To create a new vector coverage:

From the FORESITE main menu, select **Data Management → Edit Dataset**.

The FORESITE Edit Tools menu appears.

Select **File → Coverage → New → Using Existing…**

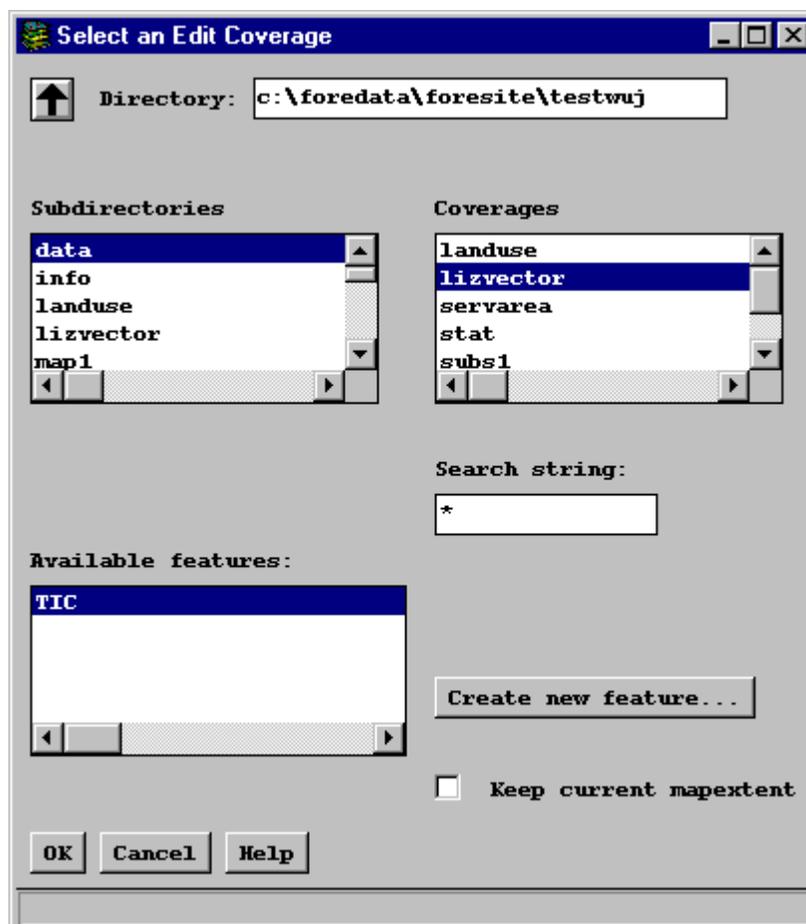The **Create Vector Dataset** window appears.



Click on **landuse** in the **Existing Vector Dataset** list.

Type the new coverage name in the text box next to **New Vector Dataset to Create:**

Click **Create**.

From the Foresite Edit Tools menu, select **File → Coverage → Open**.

The **Select Edit Coverage** window appears.

Click the coverage just created.

Add features, such as polygons, arcs and nodes by clicking **Create Feature** and selecting the feature to be added from the **Create Feature** menu, then clicking **Apply** to add the feature.

Once finished, click cancel to return to the **Select Edit Coverage** window.

Click one of the feature(s) in the **Available Features** window created for the new coverage and click **OK**.

The **Edit Arcs & Nodes** window appears with a blank coverage.

The new coverage is created.

# Dataset Editor Setup

Before editing, set up the background editing environment.

From the Foresite Edit Tools menu, select **Display → Back env General → Image**.

The **Image Environment** window appears.

Right-click on **Add Image**. Select the image to use.

Click to check the **Draw** button. The image will display in the edit window and serve as a background for the data entry of spatial date.

Open the **Pan/Zoom** menu from the Foresite Edit Tools menu by selecting **Display → Pan Zoom**.

From the **Edit Arcs & Nodes** menu, click **Edit Env**. The **Arc Environment Properties** window appears.

To turn **Intersecting Arcs** on, click to select **On**.

## Pan Zoom

Use the **Zoom-in** button on the **Pan Zoom** window, shown below, to display an area in the coverage such as an airport in the southeast corner.
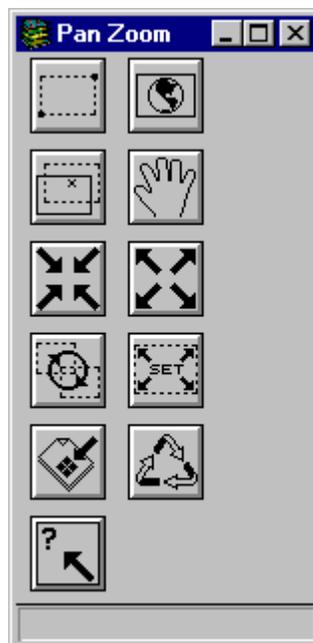
Select the **Zoom-in** button. Left-click on a point in the area in the image. Click until the landuse is visible at the desired zoom level.

Right-click on the background image, or hit **9** on the keyboard to exit the Pan Zoom tool.

# Adding Lines

To add, or draw, lines (arcs):

From the **Edit Arcs & Nodes** window, click the **Add** button.

Draw the line around the selected node. A line (arc) is comprised of a starting node, a series of vertices, and an ending node.

Click the start point for the line with the middle mouse button on a point on the background image.

Continue drawing the boundary around the selected node by left-clicking on the vertices that define the line around the node.

When the last line is to be drawn, use the middle mouse button to select the last node so the last line intersects, or overlaps, the beginning line.

**NOTE:** Watch the background (UNIX) window for editing instructions using the numeric keys on the keyboard. As an example:

```
--------------------------Options-----------------------

1) Vertex           2) Node             3) Curve

4) Delete vertex    5) Delete arc       6) Spline on/off

7) Square on/off    8) Digitizing Options    9) Quit
```

If a "clock icon" appears on a window and the window does not respond, there is another window hidden that is awaiting a response.

Use the Alt-Tab keys to step through each of the windows to find the one needing a response. Click on the appropriate response or enter the appropriate number on the keyboard.

## Adding Another Line (arc)

To add another area boundary (arc) adjacent to the first:

From the **Edit Arcs & Nodes** menu, click **Add**.

Click on the starting point for the arc with the middle mouse button on an appropriate point inside the boundary (arc) surrounding the node on the background image.

Continue drawing the boundary around the new area to the left of the selected node by left-clicking on the vertices that define the new area boundary.

When the last line is to be drawn, use the middle mouse button to select the last node so it is inside the new boundardy and the last line intersects with a line on the boundary of the previously digitized boundary.

## Deleting a Line (arc)

To delete a line:

Click the **Arrow** button the **Feature Selection** toolbar.

Left-click to select the line to delete.

Right-click on the background image (or press **9** on the keyboard) to exit the selection process.

Select the **Del** button the **Edit Arcs & Nodes** menu.

The line is deleted.
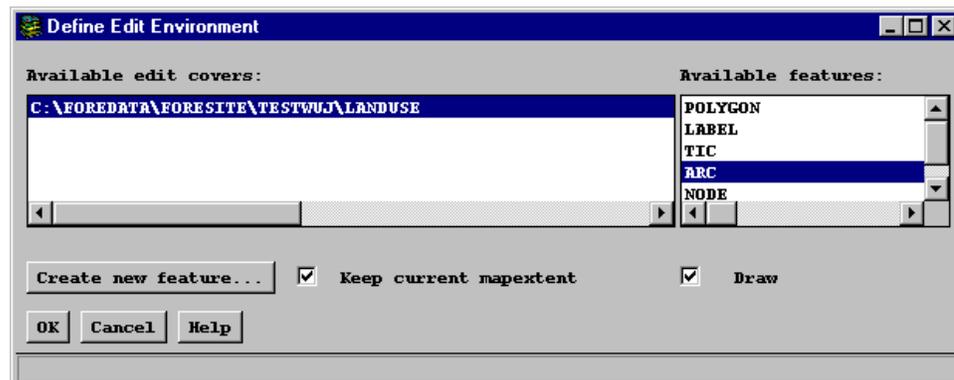
# Nodes and Dangles

## Modifying Nodes

Nodes are automatically created at the end points of each line.

To move a node from one location to another:

From the Foresite Edit Tools menu, select **Edit → Change Edit Feature**.

The **Define Edit Environment** window appears.



Click **Node** in the **Available Features** window. Click **OK**.

Using the **Pan Zoom** function, zoom into the line so the nodes are clearly visible.

On the **Edit Arcs & Nodes** menu, click **MOVEN** under **Edit Nodes**.

Left-click on the node to move.

Watch the dialog (UNIX) window for instructions. An example:

```
Point to the node to move <9 to Quit>
Node (3133616.271,10045711.598) selected
```

```
1 = Select    2 = Next        3 = Who
4 = Move    9 = Quit
```

Type **4** on the keyboard.

Left-click on the new location on the screen.

The nodes, and connected lines, are moved to the new location.

Another node function is to split and unsplit lines:

Select the line to split in the Edit window.

On the **Feature Selection** menu, click the **Arrow** button, then, on the **Edit Arcs &** Nodes menu, click the **Split** button.

Click on the line at the point where it is to be split. The editor will place a node at that location.

To unsplit a line, select two lines connected by a node and, on the **Edit Arcs & Nodes** menu, click **UNSPL**.

The node will be removed and the two lines merged.

## Deleting Dangles

Dangles are the ends of lines that do not close a polygon. They are created when digitizing an area and the digitizing ends by "overlapping" or intersecting a boundary line (arc) with an existing arc.

The **Delete Dangles** trool selects all of the arcs that "dangle" so they can be deleted with the **Delete Arcs** button.

**CAUTION:**   Only select and delete dangles used to create a polygon coverage. Deleting dangles on a line coverage such as highways or roadways could delete needed data.

To delete dangles, after an arc (and polygon) coverage has been created and built for polygons:

From the Foresite Edit Tools menu, select **Edit ➔ Change edit feature…**

The **Define Edit Environment** window appears. Click to select **Arc** from the list and click **Apply**.

From the **Feature Selection** window, click **More**.

The **More Selection Tools** window appears.



Click the **Dangle** button. This will select all dangles in the coverage.

On the **Edit Arcs & Nodes** menu, select **DEL**. All dangles will be deleted.

# Working with Polygons

**NOTE:**   It is recommended all polygons should be created with the **Edit Arcs & Nodes** toolbar, followed by **Topology Build**. If using the **Polygon Editor** to create a polygon around all polygons (for example, the polygon represents the service area for the study), this may destroy **all** other polygon data contained in the larger polygon.
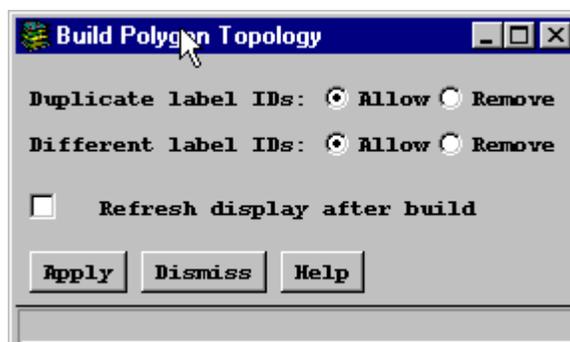
## Creating Polygons from Arcs

After editing lines and nodes, change the lines (arcs) to polygons.

To change the lines to polygons:

From the Foresite Edit Tools menu, select **Tools → Topology: Build…**

The **Build Polygon Topology** window appears.

Click **Apply**. A message "Building topology" will appear in the bottom of the window. This verifies the lines are connected, form a polygon from them, and give the polygon area attributes.

When the build is complete, a message "Coverage built" will appear in the bottom of the window.

Click **Dismiss** to close the **Build Polygon Topology** window.

## Adding Polygons

Another method of creating polygons is to use the **Polygon Editor**.

From the Foresite Edit Tools menu, select **Edit → Change edit feature…**

The **Define Edit Environment** window appears. Click to select **Polygon** from the list and click **OK**.

The **Edit Polygons** window appears.



Zoom into the area of coverage where the polygon is to be added.

Click **ADDP** on the **Edit Polygons** window.

In the dialog window (UNIX window), a set of instructions will appear:

```
-----------------------Options--------------------------
1) Add Polygon    2) End Polygon    4) Delete last point
5) Delete last Polygon    8) Digitizing Options   9) Quit
(Polygon) User-ID: 863 Define the polygon
```

Type **9** on the keyboard to end digitizing (creating) a polygon.

## Adding a Polygon to an Existing One

From the **Edit Polygon** tool bar, click **ADDL**.

In the dialog (UNIX) window, the following instructions appear:

```
-----------------------Options--------------------------
1) Vertex            2) Node            3)Curve
4) Delete vertex    5) Delete Curve    7) Square on/off
8) Digitizing Options    9) Quit
```

Select a point in the image on one side of the polygon with a middle-mouse click, or type **2** on the keyboard, and the node is created.

To ensure a polygon is created, overshoot an existing polyline so "dangles" will be present. Dangles can be deleted as described in the previous section, *Deleting Dangles*.

Left-click to create the vertices, or type **1** on the keyboard, until the last point of the polygon is reached.

Middle-mouse click, or type **2** on the keyboard, on the image where the last node will be. Another node is created and the polygon is closed.

Type **9** to end the polygon creation.

## Deleting a Polygon

To delete a polygon:

From the **Feature Selection** menu, click the **Arrow** button.

Select the polygon to be deleted on the screen.

Type **9** to finish.

Click **DEL** on the **Polygon Editor** tool bar window.

The polygon is deleted.

To view the changes, from the Foresite Edit Tools menu, select **Display →
Draw**.

## Merging Polygons

To merge two polygons:

From the **Feature Selection** tool bar, select the **Arrow** button.

Select the two polygons to merge. Type **9** to finish.

On the **Edit Polygons** tool bar, click **MERGE**.

The two polygons are now one.

To view the changes, from the Foresite Edit Tools menu, select **Display →
Draw**.

## Splitting a Polygon

To split a merged polygon into two polygons:

From the **Feature Selection** menu, click the **Arrow** button.

Select the polygon to be split on the screen.

Select the two polygons to merge. Type **9** to finish.

On the **Edit Polygons** tool bar, click **SPLIT**.

Middle-mouse click, or type **1** on the keyboard, to select a line on one side of
the polygon. Repeat for a line on the other side of the polygon.

Type **9** to quit.

A message "Splitting polygon(s) by 2 line segments…" appears in the dialog
window.

There are now two polygons.

## Building a Polygon

Polygons must be built with the Topology Build function. The polygons are not actually polygons that can be used to enter data such as landuse data into the landuse-code attribute. Polygons must be "built" first in order to add attributes.

To build a polygon:

From the Foresite Edit Tools tool bar, select **Tools → Toplogy: Build…**

The **Build Polygon Topology** window appears. Click **Apply** to build the polygons. A message will appear in the bottom of the window, "Building topology…" When the build is complete, a message will display, "Coverage built."

Click **Dismiss** to close the **Build Polygon Topology** window.
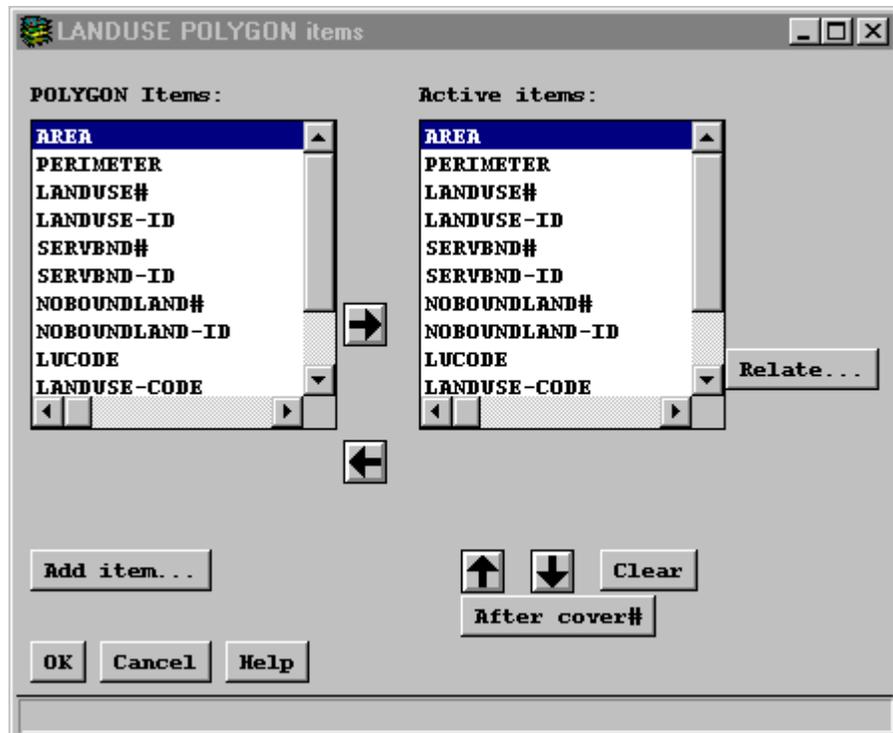
## Add Polygon Attributes

To add the attribute fields for polygons:

From the Foresite Edit Tools menu, select **Edit → Change Edit feature…**

The **Define Edit Environment** window appears. Select **Polygon** from the list and click **OK**.

From the **Edit Polygons** tool bar, click **Table Mngr**.

The **LANDUSE Polygon items** window appears.

To add an item, such as "landuse-code, click **Add item…**

The **Add Items** window appears. Type the name of the new item. If the new item is to be an integer, click to select **INT**. Alternatively, if the new item is to be a character, a number, date, etc., click to select the proper characteristic.

Click **Add**. A message will appear "ITEM <ITEM NAME> added" in the bottom of the window. Click **Dismiss** to close the **Add Items** window.
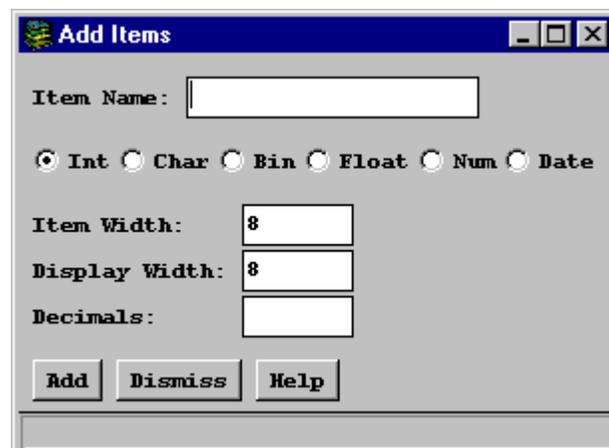
To make the new item active, click to select it in the left list of the **LANDUSE Polygon items** window, then click the right arrow between the two lists to move it into the **Active items:** window.

The new attribute item has been created.

## Modify Polygon Attributes

To modify the attribute fields for polygons:

From the Foresite Edit Tools menu, select **Edit → Change Edit feature…**

The **Define Edit Environment** window appears. Select **Polygon** from the list and click **OK**.

To review the attribute tables of all items, click **All** on the **Feature Selection** tool bar.

Click **Table Editor** on the **Edit Polygons** toolbar.

The **Table Editor** window appears. Click **Items**. The attributes table will appear.

Next, click **List** on the **Table Editor** window. The list of items and their values will appear. To view the entire list, click **Continue**. Click **Pause** to stop scrolling and **Quit** to return to the main menu.

To modify or set values for an item:

From the **Table Editor**, click **Edit**. The **Edit Attributes** window appears.

In this example, enter the value **1** next to **NEWITEM.** Click **Next**, and enter **2** next to **NEWITEM.**

Click **Dismiss** when editing is complete.

To view the changes, select **List** from the **Table Editor**.

To change attributes for two or more polygons at the same time, select the polygons by selecting the **Arrow** button from the **Feature Selection** tool bar and clicking on them on the map. Follow the instructions on the dialog window.

Once the polygons are selected, click the **Calc** button on the **Table Editor**. Click to select the item to edit. Type **100** in the value field. Click **Calc** to change the values.

Click **Dismiss** when finished.

## Polygon Coverages, Grids and Attribute Table

| Grids created | Coverage Name | Attribute Name |
|---|---|---|
| Map11-20 | landuse | landuse-code |
| Map21 | zoning1 (optional) | zoning-code |
| Map22 | highway1 | highway-code |
| Map23 | roadway1 | roadway-code |
| Map24 | inter1 | inter-code |
| Map221-229 | thres1 (redevelopment) | threshold-code |
| Map25 | railrd1 | railrd-code |
| Map26 | terrain1 (optional) | terrain-code |
| Map27 | facility11 (optional) | facil-code |
| Map28 | facility21 (optional) | facil-code |
| Map29 | facility31 (optional) | facil-code |
| Map30 | facility41 (optional) | facil-code |