

# Interface Design Mockups: Space Imaging / Sanborn

## Using design mockups to improve usability and speed development of GIS software

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*All mockups were designed for Space Imaging ... which became Sanborn, when I worked as a contractor on the UI design for a GIS system called Southern Fire Risk Assessment System” (SFRAS).*

# Table of Contents

Topic	Page
SFRAS: Creating a Fuel Treatment Area (project description)	3
▪ Task Flow	4
▪ Menu	5
▪ Steps 1 - 4	6-11
▪ Error Messages	12-15

# SFRAS: Creating Fuel Treatment Area

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3

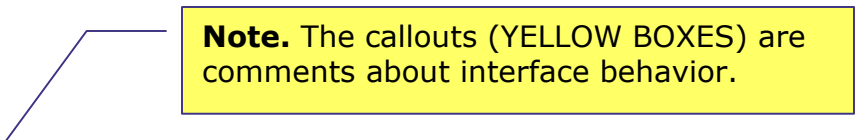
In this project I worked onsite and offsite with a small team in Fort Collins at Sanborn. We were developing the Southern Fire Risk Assessment System ... a GIS application for creating maps and reports to analyze wildland fire risk/mitigation.

The software consisted of many modules. My responsibility was to create PowerPoint mockups for all the screens, one module at a time. These User Interface mockups were then used by the software developers to guide them in their coding. Mockups for each module included:

- Outline of the user's actions to perform specific tasks (task flow).
- Individual UI screens
- Pop-up dialogs that appeared while the user performed the task.
- Error messages (in understandable language).

The goal was a logical task flow (from the user's perspective), well-designed screens, and understandable language.

**These slides show mockups of screens for one module – fuel treatment. I also show where error conditions that might occur.**



**Note.** The callouts (YELLOW BOXES) are comments about interface behavior.

# Task Flow: Create new fuel treatment area

## Step 0. User selects Analyze -> Fuel Treatment Areas

### Step 1 of 4: Select type of fuel treatment activity

- User selects this radio button: **Create new fuel treatment area**
- Click **Next>**

### Step 2 of 4: Create fuel treatment boundary

- OPTIONAL: Zoom into the extent showing all existing treatment areas on the map.
- Draw fuel treatment boundary on map. User presses the button and the cursor changes. User can now digitize using the left-mouse button (double-click completes digitizing). Resulting polygon is highlighted on the map.  
-OR-
- Use polygons from existing layer. Names of loaded base layers appears in pull-down list. NOTE. These are layers specified earlier by **Tools -> Preferences**.  
-OR-
- Use existing treatment area boundaries. Names of previously created fuel treatment boundaries appear on pull-down list. These are areas defined earlier with **Analyze -> Create Fuel Treatment Areas**
- From the pull-down list, select the year to apply a treatment.
- Enter the new name for the defined fuel treatment area.
- Click **Next>**

### Step 3 of 4: Select fuel treatment and view profile

- From pull-down menu, select one fuel treatment for the selected treatment area.
- The projected fuel profile now appears in the table.
- Select the appropriate GAP classes for each fuel model in the table and make any changes to the transitional fuel models listed for the various years.
- Add optional fuel treatment comments.
- Click **Next >**

### Step 4 of 4: Select output years and create fuel layers

- Check the checkboxes for the years for which you want to create fuel layers.
- Check the checkbox next to **Create WFSI** only if you want to create the index.
- Click **Create Fuel Layers** to create a layer for each selected year. The names of the layers (one per year) appear in the legend, with the layer associated with the most recent layer displayed.

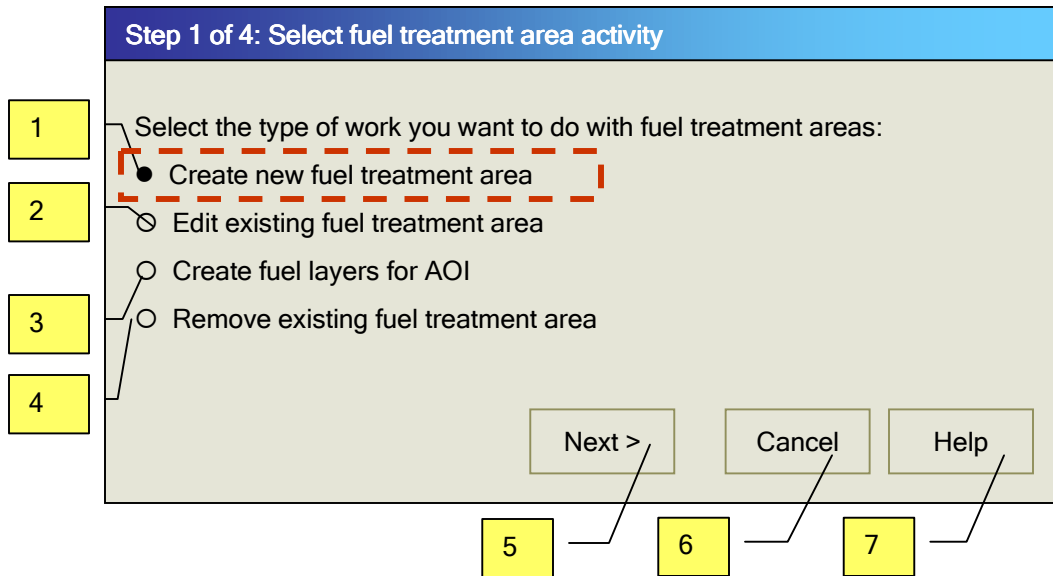
# Step 0. Select item from SFRAS menu

Manage ▼	Create ▼	Analyze ▼	Tools ▼	Help ▼
Define AOI	Maps	Initial Dispatch Locations	Ingest Data	SFRAS Help
Load AOI	Reports	Fuel Treatment Areas	Preferences	About SFRAS
Load Published Results	Wildland Fire Susceptibility Index	FOA Modification Areas		
Remove AOI	Levels of Concern	Community Impacts		
Remove Datasets	Fire Response Accessibility Index			
Import AOI				
Export AOI				

### Notes.

1. The **Manage** menu now has two additional Load functions since an AOI or Published Results must always be loaded before using any of the other functions. By pulling out these load functions into this menu, we avoid cluttering other dialogs with these same functions.
2. All cascade menus are gone. Users can reach any function they need with one menu click.
3. **Preferences** is a single menu item. It produces a dialog where the user can set the state and the data paths. If the user can set more parameters, we may want to consider a tabbed dialog.

# Step 1 of 4: Select what you want to do with fuel treatment areas



**Assume.** Outline of existing AOI is displayed on map.


- 1. Create new fuel treatment area.** You want to create a fuel treatment area "from scratch," including its boundary, treatment type, treatment year, fuel profile, and fuel layers.
- 2. Edit existing fuel treatment area.** You want to use an existing treatment area, and then make changes to its treatment type, treatment year, or fuel profile, and re-create its fuel layers.
- 3. Create fuel layers for AOI.** Create fuel layers for all fuel treatment areas in active AOI
- 4. Remove existing fuel treatment area.** You want to remove the fuel treatment area feature (boundary, treatment information, fuel profile, fuel layers).
- 5. Next>.** Takes user to the Step 2 dialog where the user can specify the treatment type and view the fuel profile for the new fuel treatment area.
- 6. Cancel.** Closes dialog and deletes the feature (boundary and treatment info).
- 7. Help (OPTIONAL).** Displays a Help dialog about the items on this dialog

**For additional explanation, see NOTES section below this slide.**


## Step 2: Create fuel treatment boundary

7

**Step 2 of 4: Create fuel treatment boundary**


Zoom into extent of existing treatment areas: (optional)  1

Select method for creating the fuel treatment boundary

Draw boundary on map:  a

Use polygon(s) from existing layer

Select layer: [layer\_name] ▼ b

Select polygon: 

Use existing treatment area boundary

Select treatment area: [treatment\_area\_name] ▼ c

Use existing FOA modification boundary:

Select treatment area: [FOA\_mod\_name] ▼ d

Enter treatment area information

Select year treatment will occur: [current\_year] ▼ 2

Enter new fuel treatment area name: (60 characters or less)

3


4

5

6

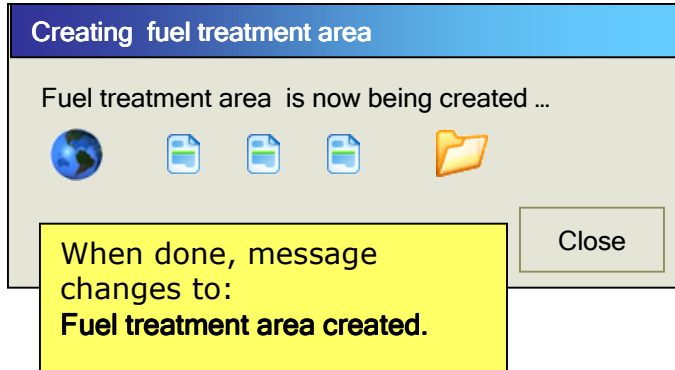
Next > Cancel Help

**For additional explanation, see NOTES section below this slide.**



- 1. Zoom into extent.** User can click button to display the existing fuel treatment areas in the AOI.
- 2. Select method to create the boundary:**  
DEFAULT = Draw boundary on map.
  - a. Draw boundary.** User presses the button and the cursor changes. User can now digitize using the left-mouse button (double-click completes digitizing). Resulting polygon is highlighted on the map.
  - b. Use polygons ...** Displays list of loaded base layers. **NOTE.** These are layers that were specified by **Tools – Preferences.** User selects ONE layer from pull-down list and then presses the arrow button and clicks a polygon from the layer to select it. Selected polygon is highlighted on the map. DEFAULT = First layer on list.
  - c. Use existing treatment area boundary ...** Displays list of treatment boundaries previously created. DEFAULT = First area on list???
  - d. Use existing FOA modification boundary ...** Displays list of FOA modification boundaries previously created. DEFAULT = First area on list. (list is blank if none were created previously)
- 2. Select year.** Displays list of ten different years, starting with the current year. Specify the year when you plan to apply a treatment. DEFAULT = current year
- 3. Fuel treatment area name.** User-defined name (60 characters or less). DEFAULT = blank
- 4. Next>.** If user drew the boundary, start the fuel treatment area creation process; otherwise, take the user to the Step 3 dialog to select a treatment type and view the fuel profile.
- 5. Cancel.** Closes dialog and deletes the feature (boundary and treatment info).
- 6. Help (OPTIONAL).** Displays a Help dialog about the items on this dialog.

# Creating fuel treatment area



**If the user digitized the boundary, after user clicks Next >, the following occurs:**

- An hour glass appears on top of the Step 2 dialog until the fuel treatment area creation is complete ... then the Step 3 dialog appears so the user can enter the type of treatment and view the fuel profile.  
-OR-
- If creation time will exceed 2 seconds, we should instead display a **Creating fuel treatment boundary** dialog with an animated image of files going from a globe to a folder. This helps the user know that creation is occurring. Then, when creation is complete, a message can appear.

# Step 3 of 4: Select treatment and view profile

Step 3 of 4: Select treatment and view profile

Select type of fuel treatment: [treatment\_type] 1

Projected Fuel Profile

Fuel Model	GAP Class	Acres	Fuel Profile										
			(projected fuel models for each year after treatment where 0=year of treatment)										
			0	1	2	3	4	5	6	7	8	9	10
			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1	<input type="text" value="▼"/>												
2	<input type="text" value="▼"/>												
3	<input type="text" value="▼"/>												
4	<input type="text" value="▼"/>												
5	<input type="text" value="▼"/>												
6	<input type="text" value="▼"/>												

Fuel treatment comments (250 characters or less)

6

Reset 7 Next > 8 Cancel 9 Help on Fuel Models

**For explanation of numbered fields, see NOTES section below this slide.**

**Need to verify that this is a pull-down, and that when user selects a different GAP class, the profile changes accordingly**

**Depending on year of treatment, cells for any years beyond our 10 year horizon are not available for editing**

**5**

## Step 4 of 4: Select years and create fuel layers

10

Step 4 of 4: Select years and create fuel layers

Select years for creating fuel layers:  2005  2006  2007  2008  2009  2010  2011  2012  2013  2014  2015






Automatically create WFSI

Create Fuel Layers Cancel Help

### Creating fuel layers...

Creating fuel layers

Fuel layers are now being created ...

When done, message changes to:  
**Fuel treatment boundary created.**

Close

**For explanation of numbered fields, see NOTES section below this slide.**

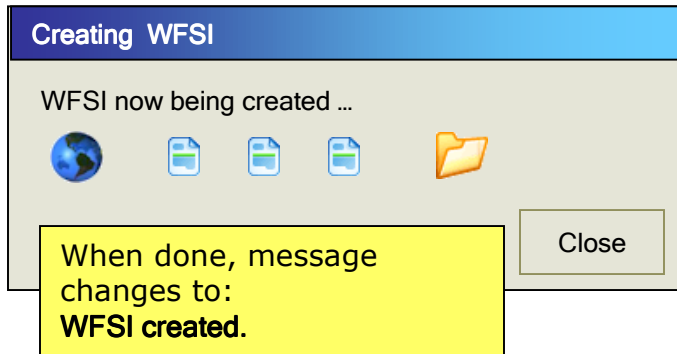
#### After user clicks Create Fuel Layers, the following occurs:

An hour glass appears on top of the Step 4 dialog until the fuel layer creation is complete ... then all dialogs close and the following happens:

- WFSI creation dialog appears if user checked the CHECKBOX. (see next page)
- Names of layers appear in the legend (one layer per selected year)
- Layer associated with most recent year is displayed (active)
- User can select different years from legend to display layers from other years

**NOTE.** If creation time will exceed 2 seconds, we should instead display a **Creating fuel layers** dialog with an animated image of files going from a globe to a folder. This helps the user know that creation is occurring. Then, when creation is complete, a message can appear.

# Creating WFSI...

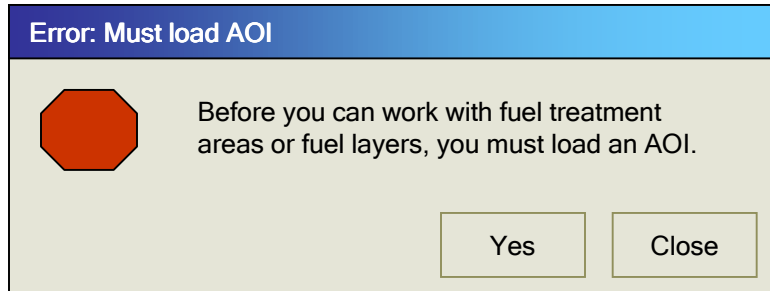


**If user checked the checkbox and then created the fuel layers ... while the WFSI is being created, the following occurs:**

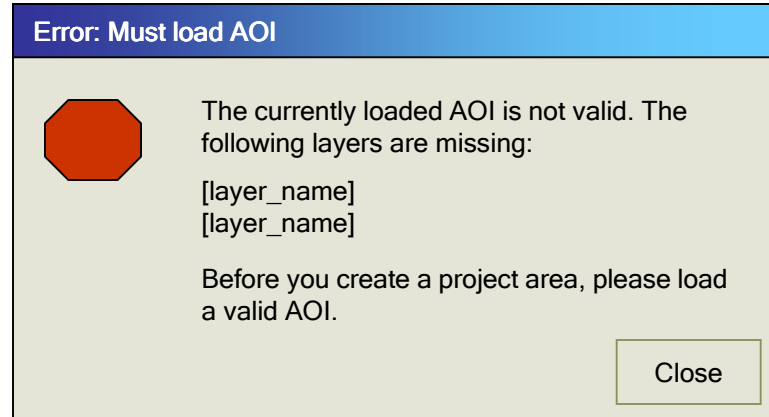
- An hour glass appears on top of the Step 4 dialog until the WFSI creation is complete ... then all dialogs close.  
-OR-
- If creation time will exceed 2 seconds, we should instead display a **Creating WFSI** dialog with an animated image of files going from a globe to a folder. This helps the user know that creation is occurring. Then, when creation is complete, a message can appear.

## Error Messages: Create fuel treatment area (Before you start)

12




You did not have an AOI loaded when you clicked **Analyze -> Fuel Treatment Areas**



You did not have a valid AOI loaded when you clicked **Analyze -> Fuel Treatment Areas**

## Error Messages: Create fuel treatment area (Step 2)

**Error: Fuel treatment area already exists**




The boundary you defined overlaps that of another fuel treatment area with the same treatment year.

Please redefine your boundary so no overlap occurs.

Close

You defined a boundary that overlaps another treatment area with the same treatment year and then clicked **Next**.

**Error: Missing fuel treatment area name**




You forgot to enter a fuel treatment area name.

Close

You clicked **Next**, but forgot to enter a name for the fuel treatment area.

**Error: Fuel treatment area already exists**




A fuel treatment area with this name [project\_area\_name] already exists in the AOI.

Please change the name and try again.

Close

You clicked **Next**, but entered a name for a fuel treatment area which is the same name as a treatment area that already exists.

**Error: Fuel treatment area creation did not occur**



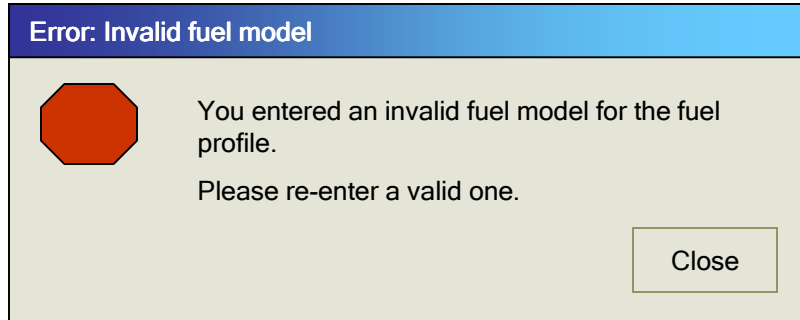
An internal error occurred.  
Fuel treatment area was not created.  
**[suggested action???**

Close

Fuel treatment area creation begins, but some internal error occurs and it never completes.

## Error Messages: Create fuel treatment area (Step 3)

14



You entered an invalid fuel value in a cell of the fuel profile table and then moved to another cell.

### **Other ways of handling this type of error:**

When this pop-up error message appears, let use click **Help on Fuel Models** button to get a separate window with a table showing all valid fuel models and their description. User must manually close that window when they are done using it.


### **A way of avoiding this type of error:**

Provide a pull-down list in each cell of the fuel profile. The pull-down list consists of two columns: fuel model and its description.

## Error Messages: Create fuel treatment area (Step 4)

15

**Error: xxx**




You must select at least one year to create a fuel layer.

Close

You clicked **Next>**, but forgot to check ANY of the year checkboxes for creating fuel layers.

**Error: Fuel layer creation did not occur**




An internal error occurred.  
Could not create fuel layers.  
**[suggested action???**

Close

Fuel layer creation begins, but some internal error occurs and it never completes.

**Error: WFSI creation did not occur**



An internal error occurred.  
Could not regenerate the WFSI.  
**[suggested action???**

Close

WFSI creation begins, but some internal error occurs and it never completes.