

IFTDSS Workshop

Handout 10: Prescribed Burn Plan

For more detailed instructions on preparing a prescribed burn plan, please refer to the **Preparing a Prescribed Burn Plan** tutorial within the IFTDSS online help.

1. From the Project Summary page, click on **Create New Run**.

IFTDSS 2.0 beta

Home Collaborate Projects Data Admin About Help Feedback Log Out

Logged in as Huang, ShihMing

Workshop

[Create New Run](#)

Project Summary

[Help](#)

Information

[Edit](#)

Organization Name:
Project Start Date:
Project End Date:
Project Size:
Treatment Type:
Project Status: Planned
Description:
Date Modified: 01/15/2013
Date Created: 01/15/2013

Area of Interest

Northeast corner:
Latitude: 38.1515207°
Longitude: -122.5333747°

Southwest corner:
Latitude: 38.1034121°
Longitude: -122.5980415°

Total Area:
7,481.78 Acres
30,277,800 m²

Resolution: 30.0m x 30.0m

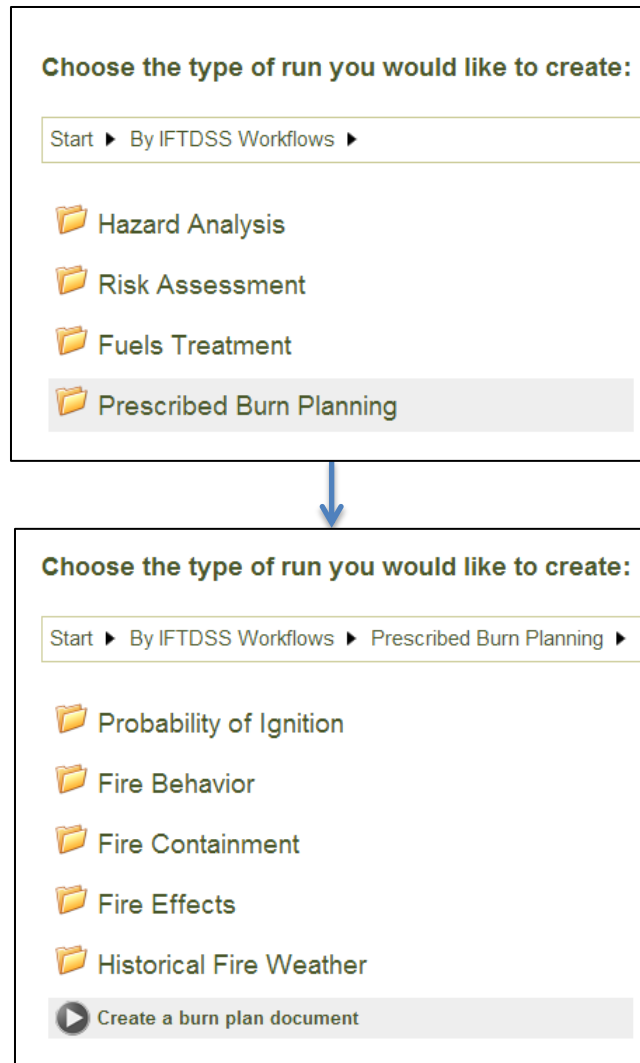
[Import Landscape data from LANDFIRE](#)
[Import Fuelbeds from LANDFIRE](#) [Upload Landscape Data Set](#)

Runs				
Run Name	Pathway	Date Modified	Date Created	Actions
Run 1	Manual treatment location (user-defined treatments...	01/15/2013	01/15/2013	

Filters: (all) (all) (all)

[Create New Run](#)

2. Select the **Prescribed Burn Planning** workflow, and then select the **Create a burn plan document** pathway.



3. Give the run a unique name, then click **Next**.

4. You are now on the **Table of Contents** view for the burn plan. You can navigate from element to element by using any of the following:
 - a. The bar at the top of the page.
 - b. The links located in the Table of Contents.
 - c. The Next button on the bottom left of the page.

Table of Contents ... Element 1: Signature Page ... Element 2, Part 1: Agency Administrator Go/No-Go Pre-Ignition Approval Checkl ▶

SMH Rx Burn Plan - Create a burn plan document Help Tools

The burn plan document pathway was designed based on the Interagency Prescribed Fire Planning and Implementation Procedures Reference Guide (IPFRG, 2008) and consists of 21 elements (objectives, ignition plan, etc.). Each user interface screen in this pathway can be filled in and when complete, can be downloaded as a Microsoft Word document. Once the burn plan is created and downloaded, the user can easily update and/or customize all sections of the burn plan using Microsoft Word. [Click here](#) for more information about this module

[Element 1: Signature Page](#)
[Element 2, Part 1: Agency Administrator Go/No-Go Pre-Ignition Approval Checklist](#)
[Element 2, Part 2: Prescribed Fire GO/NO-GO Checklist](#)
[Element 3: Complexity Analysis Summary](#)
[Element 4: Description of Prescribed Fire Area](#)
[Element 5: Objectives](#)
[Element 6: Funding](#)
[Element 7: Prescription](#)
[Element 8: Scheduling](#)
[Element 9: Pre-Burn Consideration and Weather](#)
[Element 10: Briefing Checklist](#)
[Element 11: Organization and Equipment](#)
[Element 12: Communication](#)
[Element 13: Public and Personnel Safety, Medical](#)
[Element 14: Test Fire](#)
[Element 15: Ignition Plan](#)
[Element 16: Holding Plan](#)
[Element 17: Contingency Plan](#)
[Element 18: Wildfire Conversion](#)
[Element 19: Smoke Management and Air Quality](#)
[Element 20: Monitoring](#)
[Element 21: Post-Burn Activities](#)
[Appendices](#)

There are 21 burn plan elements

[Generate Burn Plan](#)

[Next >](#)

5. On the **Element 1: Signature Page**, fill out the form and Click **Next**.

◀ Table of Contents ... Element 1: Signature Page ... Element 2, Part 1: Agency Administrator Go/No-Go Pre-Ignition Approval Ch ▶

SMH Rx Burn Plan - Create a burn plan document Help ▾ Tools ▾

Administrative Unit(s)

Project Name

Burn Unit Name

Complexity Rating

Prepared by

Prepared by Date

Technical Review by

Technical Review by Date

Recommended by


Recommended by Date

Recommended by

Recommended by Date

Approved by

Approved by Date

 [Generate Burn Plan](#)

6. On the next two steps, **Element 2, Part 1** and **Part 2**, the Go/No-Go checkbox lists on these two pages cannot be used until after the burn plan is completed. After the burn plan is generated, a Yes/No table will replace the checkbox list. Click **Next**.

◀ Page
Element 2, Part 1: Agency Administrator Go/No-Go Pre-Ignition Approval Checklist
Element 2, Part 2: Prescribed Fire ▶

Help
Tools

SMH Rx Burn Plan - Create a burn plan document

The Agency Administrator's Go/No-Go Pre-Ignition Approval is the intermediate planning review process (i.e., between the Prescribed Fire Complexity Rating System Guide and Go/No-Go Checklist) that should be completed before a prescribed fire can be implemented. The Agency Administrator's Go/No-Go Pre-Ignition Approval evaluates whether compliance requirements, Prescribed Fire Plan elements, and internal and external notifications have been or will be completed and expresses the Agency Administrator's intent to implement the Prescribed Fire Plan. If ignition of the prescribed fire is not initiated prior to the expiration date determined by the Agency Administrator, a new approval is required (IPFRG, 2008, p. 19).

This checkbox list cannot be utilized until after the burn plan is completed. Once the burn plan is generated, a Yes/No table will replace the checkbox list.

- ☐ Is the Prescribed Fire Plan up to date? (Hints: amendments, seasonality.)
- ☐ Will all compliance requirements be completed? (Hints: cultural, threatened and endangered species, smoke management, NEPA.)
- ☐ Is risk management in place and the residual risk acceptable? (Hints: Prescribed Fire Complexity Rating Guide completed with rational and mitigation measures identified and documented?)
- ☐ Will all elements of the Prescribed Fire Plan be met? (Hints: preparation work, mitigation, weather, organization, prescription, contingency resources.)
- ☐ Will all internal and external notifications and media releases be completed? (Hints: preparedness level restrictions.)
- ☐ Will key agency staff be fully briefed and understand prescribed fire implementation?
- ☐ Are there any other extenuating circumstances that would preclude the successful implementation of the plan?
- ☐ Have you determined if and when you are to be notified that contingency actions are being taken? Will this be communicated to the Burn Boss?
- ☐ Other:

(You can enter a custom checklist item)

[Generate Burn Plan](#)

< Back
Save
Next >

7. You can continue to navigate through the elements by choosing **Next**. For the workshop purposes, we are going to skip to **Element 7: Prescription**. Use the arrow on the right to scroll through the elements. When you get to **Element 7: Prescription**, click on the link.

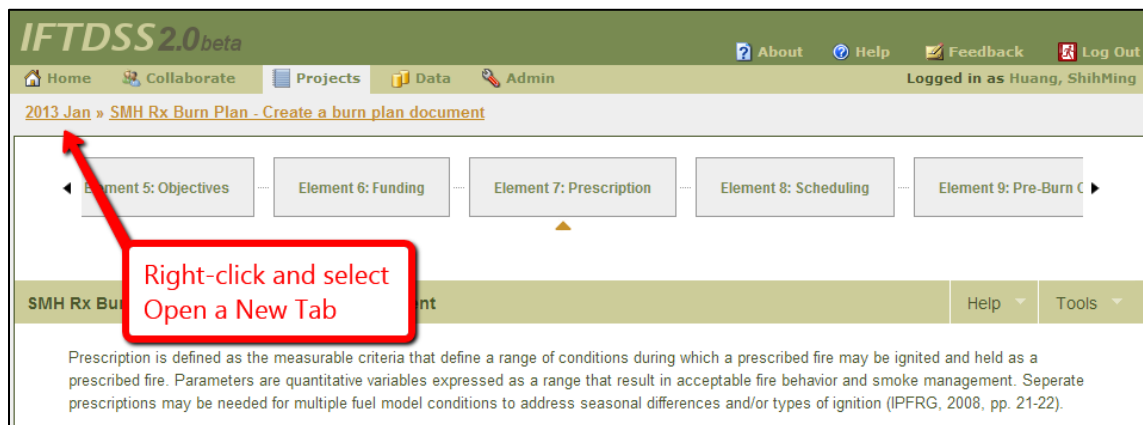


8. On **Element 7: Prescription**, fill in the form manually or import the inputs and outputs from tagged model runs (only runs within the current project will be available for data import). In this workshop, you will create a fire behavior run, and import the values into the prescription.
9. There are several tools to choose from for fire behavior and effects modeling, as seen in this list:

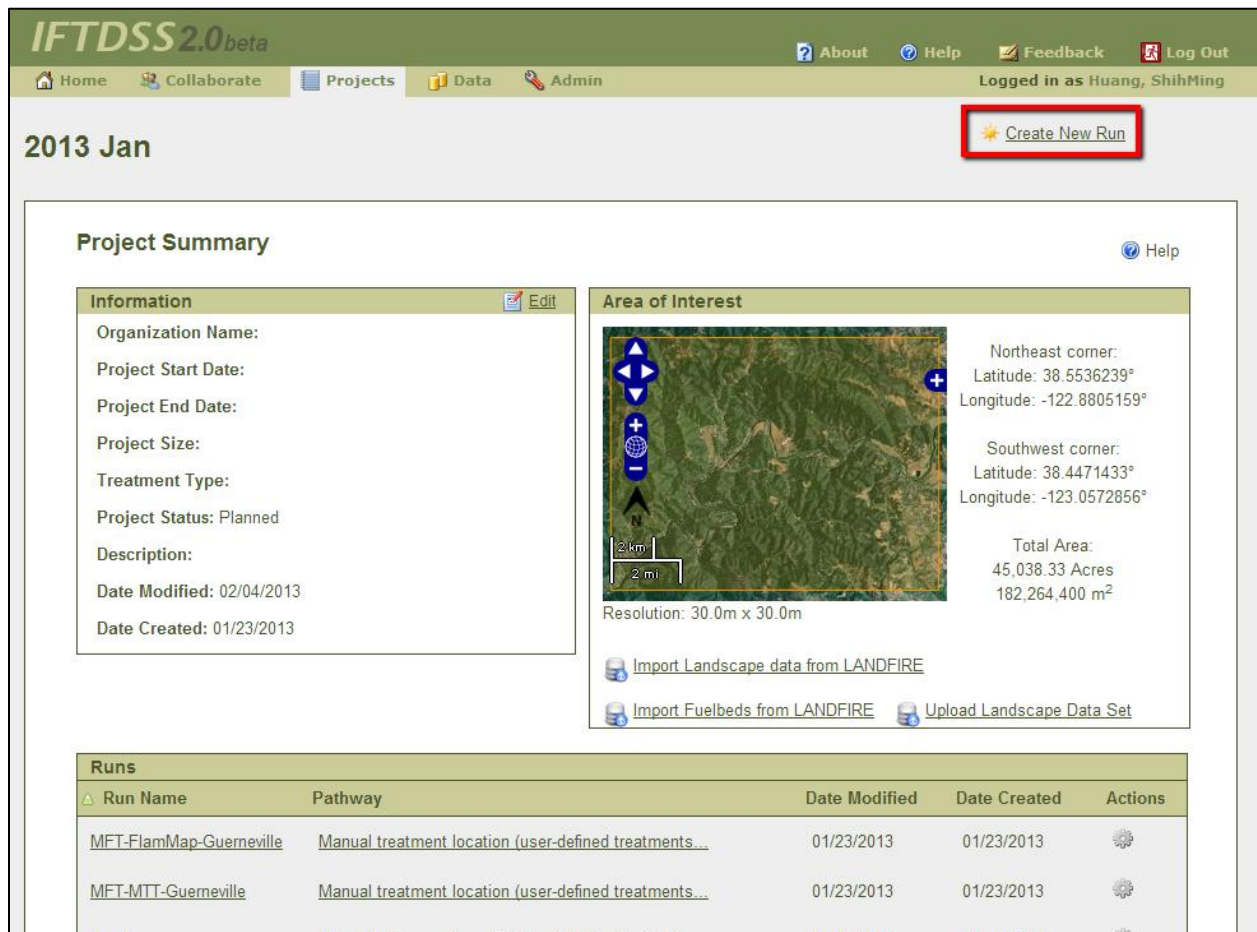
<div><div><div>^aAs implemented in BehavePlus</div><div>^bAs implemented in FCCS</div><div>^cAs implemented in FlamMap</div><div>^dAs implemented in FOFEM</div><div>^eAs implemented in Consume</div><div>○ = facilitate in decision making</div><div>● = outputs needed for burn plan</div></div></div>	Fire Behavior					Fire Effects				Fire Containment				Probability of Ignition		Data and Mapping Tools	
	Surface fire behavior ^a	Surface fire behavior for FCCS fuelbeds ^b	Crown fire behavior ^a	Fire behavior for individual stands ^c	Fire behavior across a landscape ^c	Consumption and Emissions ^d	Tree Mortality ^d	Crown scorch height ^a	Natural fuels consumption ^e	Spotting distance ^a	Containment resources ^a	Safety zone size ^a	Fire size and spread ^a	Probability of ignition from a firebrand ^a	Probability of ignition from lightning ^a	Data Studio (project area of interest maps)	LANDFIRE Data (Fuel Model & Topography)
	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
					●											●	●
	○	○	○	○	○	○	○	○	○								
	●	●	○	●	●	○	○	●	○	●				●			
	○																
	○	○	○	○	○					○	○		○	○			○
	○	○	○	○	○	○		○		○	○	○	○	○			
						●			●								
Appendicies: Appendix A. Maps (Vicinity and Project)					●											●	

10. In this exercise, we will use Surface fire behavior (IFT-surface) for our prescription (Element 7).

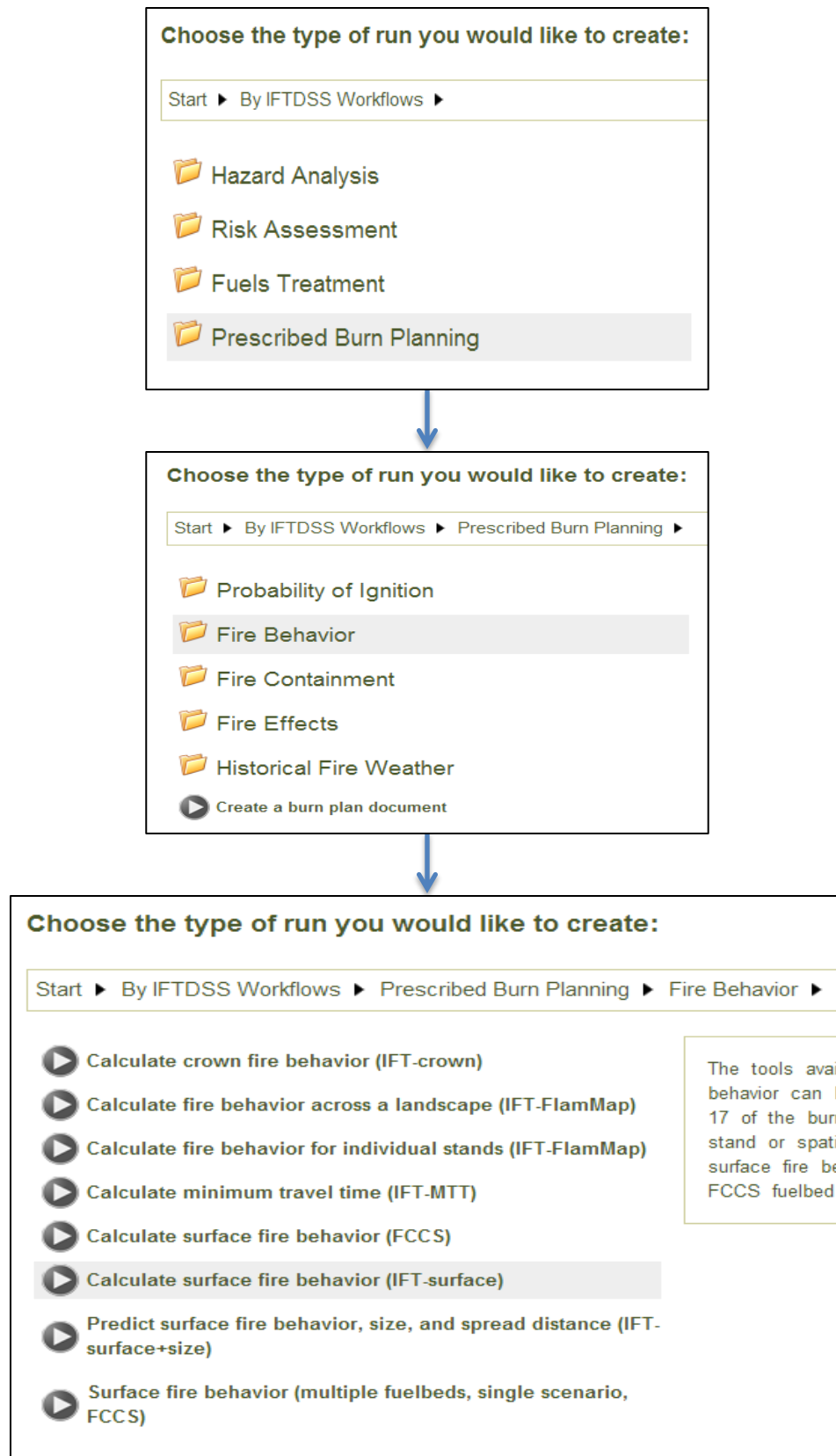
11. To start modeling potential fire behavior, right-click on the project link, and select **Open a New Tab**.



12. In your browser's window, select the new tab you opened. Now you are on the **Project Summary** page. Click **Create New Run**.



13. Select **Prescribed Burn Planning**, then select **Fire Behavior**, and then select **Calculate surface fire behavior (IFT-surface)**.



14. Give the run a descriptive name and click **Next**.

Create New Run: Calculate surface fire behavior (IFT-surface)

Run Name

Next

15. Enter 4 for “number of stands or simulations” so you can model the low, high, optimal, and maximum fire behavior in one run. Click **Next**.

Number of stands or simulations

Next >

16. Enter your Environmental Prescription into the surface fire behavior inputs. Keep in mind that Simulation 1 = Low Fire Behavior, Simulation 2 = High Fire Behavior, Simulation 3 = Optimal Fire Behavior, and Simulation 4 = Maximum Fire Behavior. Scroll to the right using the gray bar below the input boxes to enter the information for additional simulations. Click **Next**.

Configure Inputs Outputs Run Summary

Surface fire behavior (low, high, opt, max) - Calculate surface fire behavior (IFT-su... Help Tools

Inputs

Parameter	Unit	Simulation #1	Simulation #2
Fire Behavior Fuel Model		FM3: Tall grass	FM3: Tall grass
1-hr Fuel Moisture	percent	<input type="text" value="14"/>	<input type="text" value="6"/>
10-hr Fuel Moisture	percent	<input type="text" value="16"/>	<input type="text" value="8"/>
100-hr Fuel Moisture	percent	<input type="text" value="20"/>	<input type="text" value="10"/>
Live Herbaceous Fuel Moisture	percent	<input type="text" value="100"/>	<input type="text" value="90"/>
Live Woody Fuel Moisture	percent	<input type="text" value="180"/>	<input type="text" value="170"/>
Midflame Wind Speed	mi/h	<input type="text" value="3"/>	<input type="text" value="11"/>
Wind Direction (from North)	deg	<input type="text" value="290"/>	<input type="text" value="290"/>
Slope	percent	<input type="text" value="5"/>	<input type="text" value="5"/>
Aspect	deg	<input type="text" value="327"/>	<input type="text" value="327"/>
Flanking Fire Direction		<input type="text" value="90 degrees"/>	<input type="text" value="90 degrees"/>
Elapsed Time	h	<input type="text" value="1.00"/>	<input type="text" value="1.00"/>

< Back **Next >** US Customary Units Change Units

17. Now you are on the Outputs step. Review your outputs and tag the simulations for use in the burn plan. Under **Mark simulations for use with Burn Plan (Element 7)**, use the drop-downs to select the Prescription number for each simulation. In this example, you will be populating Prescription 1. Use the drop-downs to select the Fire Behavior type (low, high, optimal, and maximum). Click **Save** at the bottom of the page.

Surface fire behavior (low, high, opt, max) - Calculate surface fire behavior (IFT-su... Help Tools

Views

Table

Graph

Mark simulations for use with Burn Plan (Element 7)

Parameter	Simulation #1	Simulation #2	Simulation #3	Simulation #4
Prescription	Prescription 1	Prescription 1	Prescription 1	Prescription 1
Fire Behavior	Low Fire Behavior	High Fire Behavior	Optimal Fire Behavior	Maximum Fire Behavior

18. Navigate back to **Element 7: Prescription** (in your browser, select the tab of the burn plan document). Refresh the page by hitting the **F5** key on your keyboard. Now, under the **Import Data** section, the pathways and runs that you tagged in the previous step (step 17) will be visible in the drop-downs.

Prescribed Fire Area Element 5: Objectives Element 6: Funding Element 7: Prescription Element 8: Scheduling

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Prescription is defined as the measurable criteria that define a range of conditions during which a prescribed fire may be ignited and held as a prescribed fire. Parameters are quantitative variables expressed as a range that result in acceptable fire behavior and smoke management. Separate prescriptions may be needed for multiple fuel model conditions to address seasonal differences and/or types of ignition (IPFRG, 2008, pp. 21-22).

Import Data

Select a run and a value for each of the 3 labels, then click "Import Data" to import data tagged with that combination of labels from the selected run. Note that the Fire Type selection will be ignored for some imports.

From Pathway: Calculate surface fire behavior (IFT-surface)

From Run: surf

From Labels:

Prescription Number: Prescription 1

Fire Behavior: Low Fire Behavior

Fire Type: Head

☐ Import environmental conditions from this simulation

☐ Replace existing values

Import Data

19. Check the **Import environmental conditions from this simulation** box and click **Import Data**. This action imports data for **Low Fire Behavior**. Continue to select each of the remaining fire behavior categories (high, optimal, and maximum) and click **Import Data** for each category.

Import Data

Select a run and a value for each of the 3 labels, then click "Import Data" to import data tagged with that combination of labels from the selected run. Note that the Fire Type selection will be ignored for some imports.

From Pathway: Calculate surface fire behavior (IFT-surface) ▾

From Run: surf ▾

From Labels:

Prescription Number Prescription 1 ▾

Fire Behavior Low Fire Behavior ▾

Fire Type Low Fire Behavior ▾

☒ Import environmental conditions from this simulation

☐ Replace existing values

Import Data

20. After each data import, a green box will show you the parameters that were populated into **Element 7**.



- Imported data into 22 fields:
- Set Fire Behavior Fuel Model to FM1: Short grass in Prescription 1, Low Fire Behavior
- Set Head Fire Flame Length to 8.58 in Prescription 1, Low Fire Behavior, Head
- Set Backing Fire Flame Length to 1.57 in Prescription 1, Low Fire Behavior, Backing
- Set Flanking Fire Flame Length to 2.14 in Prescription 1, Low Fire Behavior, Flanking
- Set Head Fire Spread Rate to 345.09 in Prescription 1, Low Fire Behavior, Head
- Set Backing Fire Spread Rate to 8.66 in Prescription 1, Low Fire Behavior, Backing
- Set Flanking Fire Spread Rate to 16.90 in Prescription 1, Low Fire Behavior, Flanking
- Set Head Fire Fireline Intensity to 606.81 in Prescription 1, Low Fire Behavior, Head
- Set Backing Fire Fireline Intensity to 15.23 in Prescription 1, Low Fire Behavior, Backing
- Set Flanking Fire Fireline Intensity to 29.72 in Prescription 1, Low Fire Behavior, Flanking
- Set Reaction Intensity to 874.21 in Prescription 1, Low Fire Behavior
- Set Heat Per Unit Area to 95.91 in Prescription 1, Low Fire Behavior
- Set Midflame Wind Speed to 15.00 in Environmental Prescription, Low Fire Behavior
- Set Wind Direction (from North) to 290 in Environmental Prescription, Low Fire Behavior
- Set Wind Direction (from North) to 290 in Environmental Prescription, Low Fire Behavior
- Set Aspect to 327 in Environmental Prescription, Low Fire Behavior
- Set Slope to 100 in Environmental Prescription, Low Fire Behavior
- Set 1-hr Fuel Moisture to 4 in Environmental Prescription, Low Fire Behavior
- Set 10-hr Fuel Moisture to 6 in Environmental Prescription, Low Fire Behavior
- Set 100-hr Fuel Moisture to 8 in Environmental Prescription, Low Fire Behavior
- Set Live Woody Fuel Moisture to 180 in Environmental Prescription, Low Fire Behavior
- Set Live Herbaceous Fuel Moisture to 100 in Environmental Prescription, Low Fire Behavior

21. After you are done importing all of the data from your IFT-surface run, scroll down to review the populated environmental and fire behavior prescription.

Prescription #1 - Fire Behavior Outputs

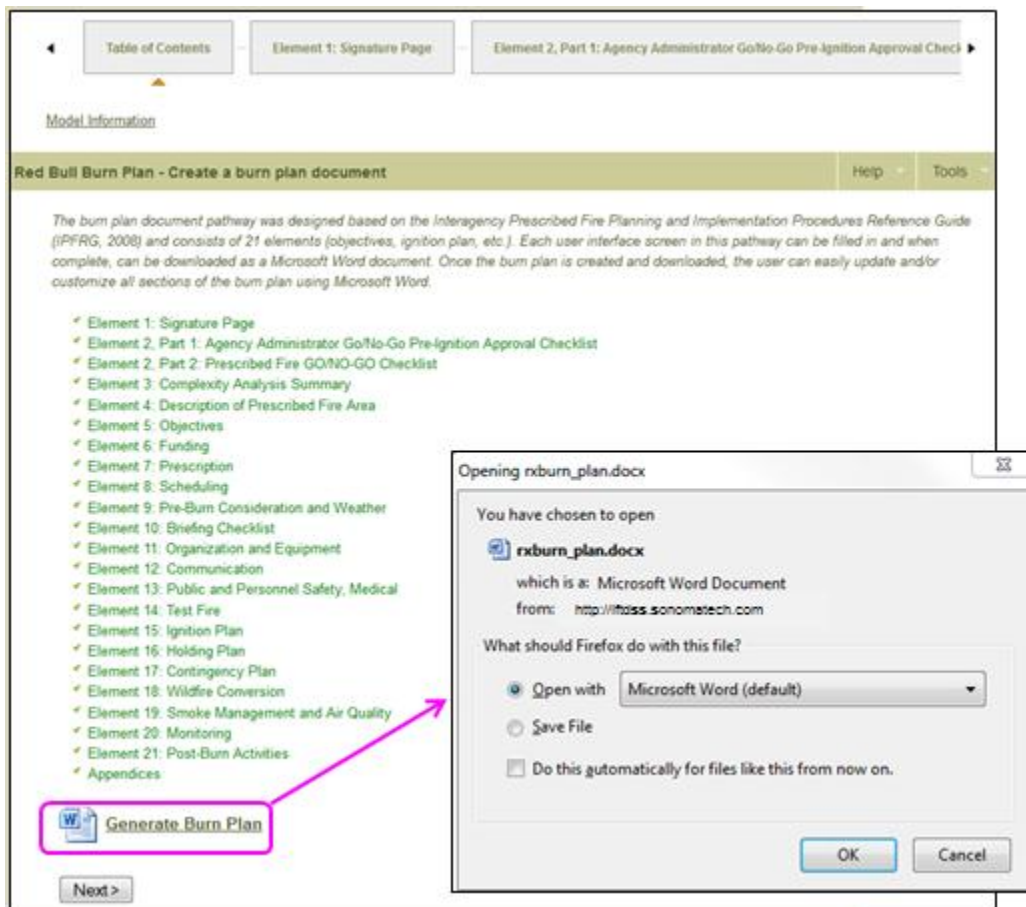
	Low Fire Behavior (within unit)	High Fire Behavior (within unit)	Optimal Fire Behavior (within unit)	Maximum Fire Behavior (outside unit)
Fuel model	FM1: Short grass	FM1: Short grass	FM1: Short grass	FM1: Short grass

	Low Fire Behavior (Head)	Low Fire Behavior (Backing)	Low Fire Behavior (Flanking)	High Fire Behavior (Head)	High Fire Behavior (Backing)
Flame length (ft)	8.58	1.57	2.14	8.58	1.57
Rate of spread (ch/h)	345.09	8.66	16.90	345.09	8.66
Fireline intensity (btu/ft/s)	606.81	15.23	29.72	606.81	15.23
Spotting distance (mi)					
Scorch height (ft)					

	Low Fire Behavior (within unit)	High Fire Behavior (within unit)	Optimal Fire Behavior (within unit)	Maximum Fire Behavior (outside unit)
Probability of ignition (%)				
Reaction intensity (btu/ft ² /min)	874.21	874.21	874.21	874.21
Heat per unit area (btu/ft ²)	95.91	95.91	95.91	95.91

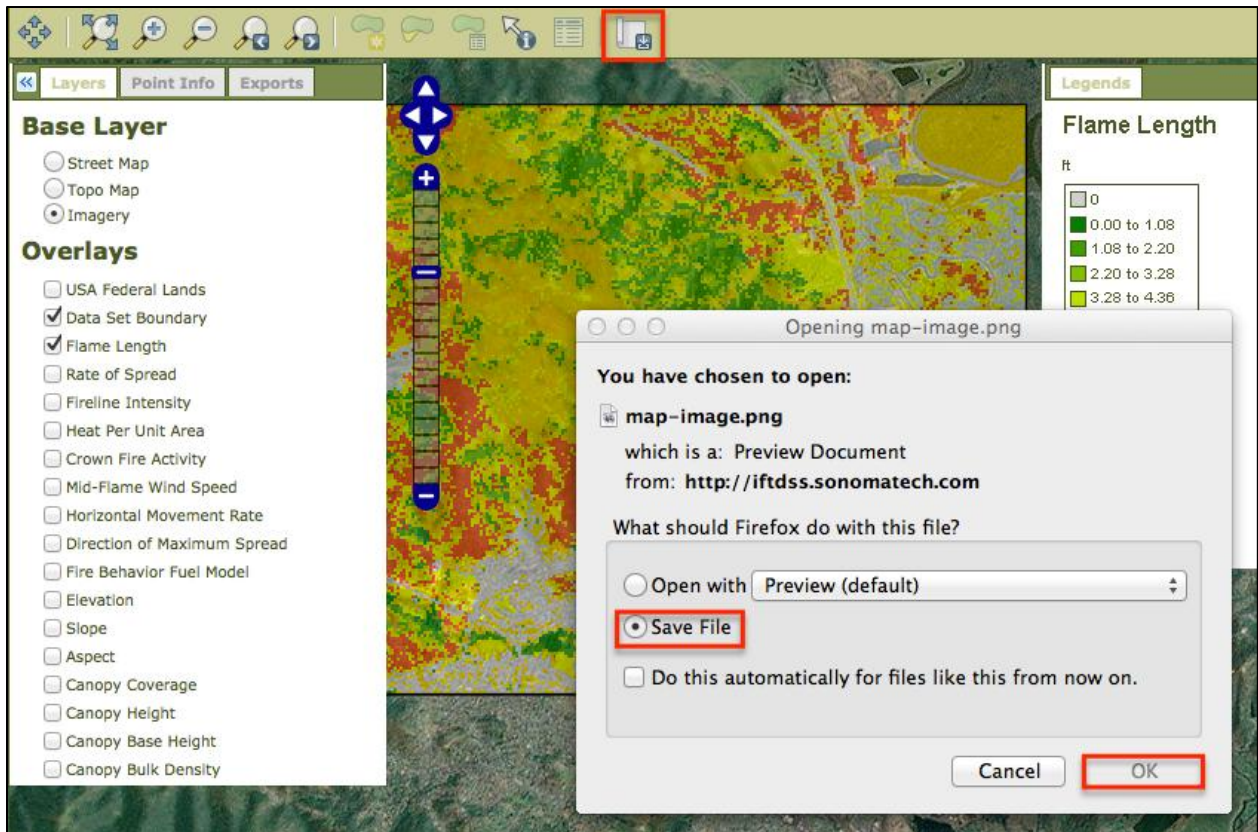
22. Continue to model fire behavior using pathways in the **Prescribed Burn Planning** workflow if desired. Tag the simulations on the Output step of those simulations for use in the **Import Data** section of **Element 7**.
23. Click **Next** at the bottom of the page to save your progress. You can continue to scroll through and fill out elements of the burn plan. In this workshop, we are going to skip the remainder of the elements.

24. On the bottom of any Burn Plan page, click **Generate Burn Plan**, and save the burn plan as a Microsoft Word document. Select **Open with Microsoft Word** and choose OK.



25. After downloading the burn plan into a Microsoft Word document, you can easily customize it. You can fill out elements in the online burn plan template located within the IFTDSS website and/or after generating the burn plan into a Word document.

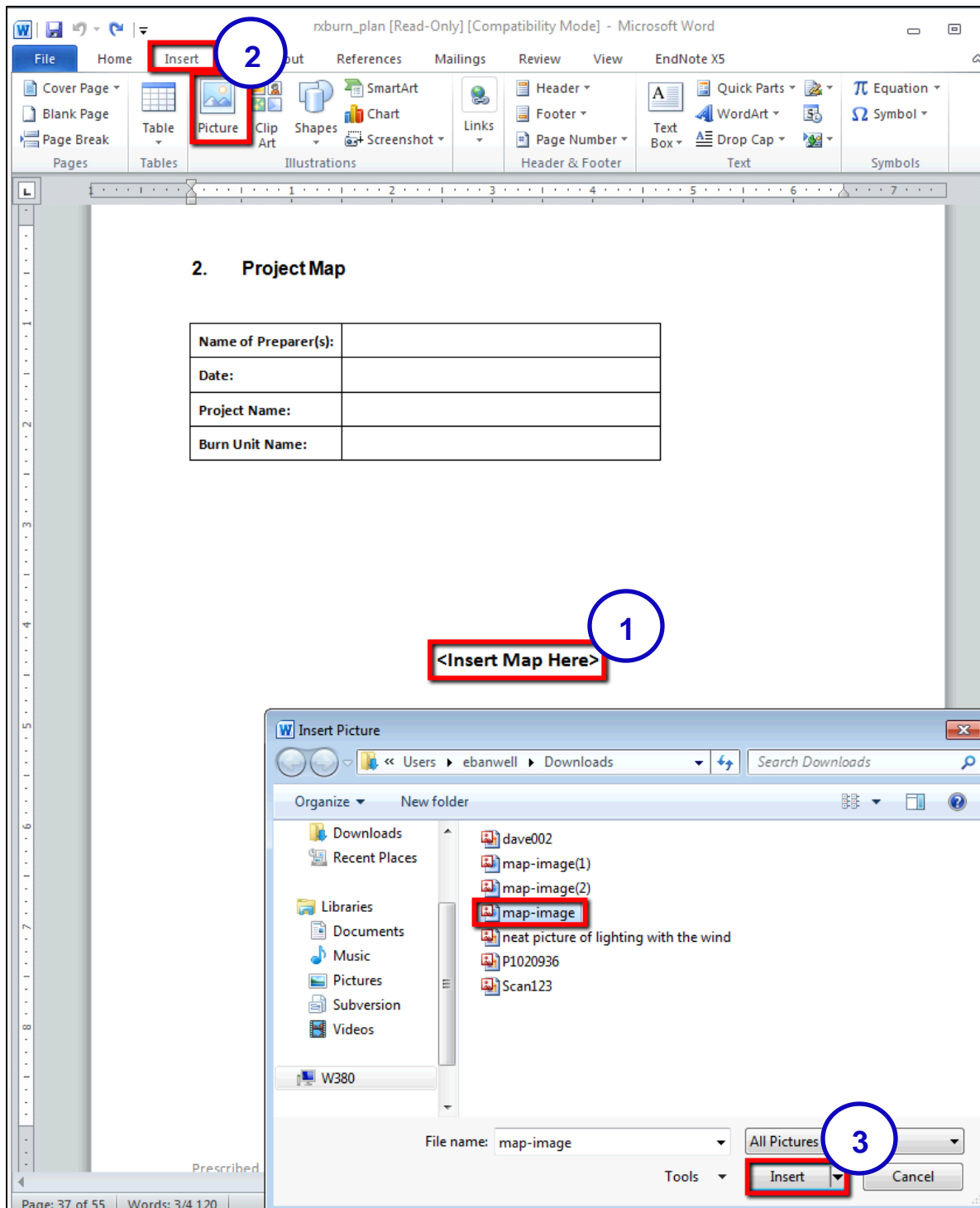
26. Next, you will save a map image from IFTDSS, and paste it into your burn plan in Microsoft Word. During this workshop, you completed a Hazard Analysis (Handout 5). Navigate back to your hazard analysis run (it is called “Calculate fire behavior across a landscape (IFT-FlamMap)”), and go to the Outputs step.
27. Select an overlay (in this example, Flame Length and Data Set Boundary are selected). On the map toolbar, select the **Save Map Image** button. Select **Save File** and choose **OK**.



28. Now, open your Microsoft Word burn plan. Navigate to Appendix A: Maps, Section 2: Project Map.

29. To insert a saved map image into a Microsoft Word document:

1. Highlight the **<Insert Map Here>** text.
2. Click on the **Insert** tab and select **Picture**.
3. Navigate to your saved map image (if the image was automatically saved, it is most likely saved in the Downloads folder) and select **Insert**.



For more detailed instructions on preparing a prescribed burn plan, please refer to the **Preparing a Prescribed Burn Plan** tutorial within the IFTDSS online help.