

Spatial Fire Planning Implementation Guide

Interagency, Wildland Fire Research, Development, and Application (WFM RD&A) Program Last Update: 4/2/2025

Overview

This guide outlines the Spatial Fire Planning process and how it can be implemented successfully to assist with incident decision-making and reporting.

What is Spatial Fire Planning (SFP)

Spatial Fire Planning (SFP) is a geospatial-centric planning process that allows wildland fire community members to manage National Environmental Policy Act (NEPA) approved guidance from Land, Resource, and Fire Management Plans (LRMP/FMP) as well as other guidance related to local values of interest in a spatial context.

By visually depicting the spatial extent to which fire planning language and guidance applies, SFP simplifies the incident decision-making process and ensures that fire management decisions are anchored to Land, Resource, and Fire Management Plans.

SFP – Past Management

From its inception in 2009 to the decommissioning of the classic version of the application in 2025, the Wildland Fire Decision Support System (WFDSS) allowed users to manage fire planning language and associated shapes through one of two planning methods:

- The Fire Management Unit (FMU) Planning Process: Introduced in 2009 with the release of the WFDSS application.
- The Spatial Fire Planning (SFP) Process: Introduced in 2014.

Regardless of the planning process selected by the user, other unit shapes and management requirements were managed at the administrative or local unit level, and strategic objectives and Fire Management Units (FMU) were managed at a national scale. Updating strategic objectives and FMUs was a complex and time intensive process as data management responsibilities were split between the field, agency leads, the WFM RD&A data team, and the WFDSS development team. Managing fire planning language and shapes within the WFDSS application required custom code development and restricted data to use within the system.

SFP - New Management

Advances in technology over the past decade have opened up opportunities for the fire community to make major shifts in how fire planning data are stored, managed, and used. Through discussions with WFDSS users, fire planning subject matter experts, and geospatial data subject matter experts; and in collaboration with the NWCG Fire Planning Committee (IFPC), and the NWCG Geospatial Subcommittee (GSC); WFM RD&A staff have developed a collection of new SFP data services and a SFP data editing application within the NIFC ArcGIS Online Organization (NIFC AGOL Org) for use in the 2025 fire season and onward.



Processes such as entering and managing fire planning language, which had been previously done through WFDSS, are now to be completed through the data editing application hosted on the NIFC ArcGIS Online Organization. Agency fire planning and geospatial personnel will now own and manage the fire planning language and data in the new SFP data services, and WFDSS will consume the data needed for wildland fire decision support.

This shift in data management has major advantages in terms of efficiency, data usability, and maintenance. Advantages include:

- Less Operations and Maintenance (O&M) The WFDSS application will not need to maintain a SFP module, leading to more rapid development of core decision support capability and reduced maintenance cost over time.
- Improved Data Accessibility Fire planning shapes and language hosted within the SFP data services on the NIFC AGOL Org will be accessible to users outside of WFDSS, including those who need to view fire planning information in mobile applications, Story Maps, Spatial Fire Management Plans, wildland fire applications, and in desktop GIS software.
- **Direct User Access to Language and Data -** WFM RD&A staff will not be "between" users and their data, allowing users to make changes more quickly following shifts in land and resource management plan direction or agency policy.
- **Better Governance Options -** Decoupling the SFP data from the WFDSS application paves the way for the transfer of data stewardship to a larger enterprise entity if deemed advantageous in the future.
- **Improved Consistency** The approach to managing fire planning data and shapes will be consistent across all types of fire planning shapes.

New SFP Management Process

Primary Shape Types

In the new Spatial Fire Planning process, fire planning language can be tied to one of four shape types.

Unit Boundaries (UB): A set of shapes that reflect the administrative boundary of a jurisdictional unit such as a National Forest, National Park, or BLM District. Language tied to these shapes is intended to apply everywhere on the unit. WFDSS called these shapes the "Unit Outline" and applied fire planning language as "Unit Wide Objectives" to these polygons.

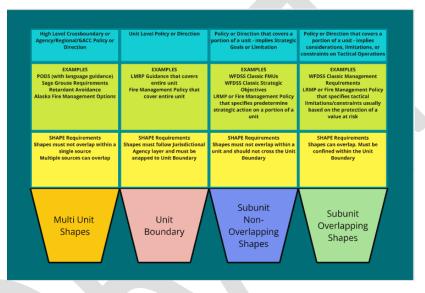
Sub-Unit, Non-Overlapping Shapes (SUNOS): A set of non-overlapping shapes contained within a jurisdictional unit boundary that represent land where fire planning language applies but does not overlap. Examples include situations where one set of language applies to WUI areas, and another set of language applies to backcountry areas. WFDSS called these shapes "FMU" or "Strategic Objective" shapes.

Sub-Unit, Overlapping Shapes (SUOS): A set of shapes that are within a jurisdictional unit boundary that can overlap each other and the other types of shapes (UB, SUNOS). Examples include fire planning language that applies to specific pieces of ground, such as a nesting habitat or a specific value at risk, but do not change the prevailing fire management language associated with



a sub-unit, non-overlapping shape or unit boundary shape. WFDSS called these shapes, management requirement shapes.

Multi-Unit Shapes (MUS): These shapes represent multi-unit management direction, where the boundaries in which the direction applies crosses jurisdictional unit boundaries. Examples include statewide fire management agreements like the Alaska Interagency Fire Management Plan, Potential Operation Delineations (PODs), or direction from multi-unit land/resource management plan amendments. WFDSS implemented this by adding specific layers like the Alaska Fire Management Options and BLM Sage Grouse Management Requirements layers. Rather than managing these as individual layers, this new SFP process will grant permissions to appropriate personnel who can manage these regional or multi-unit shapes to ensure that data is accurate and current.



Secondary Shape Types

Other Unit Shapes: Other Unit shapes are points, lines, or polygons that contain information about local values and are used to assist with incident management. Other Unit shapes uploaded into WFDSS prior to 01/06/2025 (as part of the old SFP process) were exported and are now hosted on the NIFC AGOL Org.

Misfit Shapes/Language: SFP data created and managed through the old management process (within WFDSS) were migrated over to the new SPF process in hopes of simplifying the transition for end-users. However, a collection of the data could not be migrated as it did not meet minimum transfer criteria. The data that failed to migrate over are classified as misfits and are now hosted in their own service within the NIFC AGOL Org. The misfit service includes:

- Shapes and language that were inactive or never activated in WFDSS
- Active shapes and language that had invalid Unit IDs
- Active shapes that had no associated language
- Active language that had no associated shapes
- Active language that exceeded 8000 characters



Roles and Responsibilities

There are four essential roles within the new SFP process:

SFP Viewers – A group of users that only need access to national-level, organizationally-shared, non-editable, sync-enabled views of SFP data to facilitate organizational web mapping needs. A NIFC AGOL account is needed for this role.

SFP Data Managers – A group of users that are responsible for adding and editing SFP language and shape attribution (categories, labels, descriptions) within the SFP Experience Builder application. They are also responsible for performing quality assurance and quality control (QA/QC) on the SFP language and shape attributions they added or manipulated. This role is equivalent to the Data Manager role within WFDSS. To obtain this role, a user must have a NIFC AGOL account with at least <u>Data Editor</u> access. Typically, a local fire planner would serve in this capacity.

SFP Shape Editors – A group of highly skilled GIS users that are responsible for adding, editing, and deactivating SFP shapes. They are also responsible for performing quality assurance and quality control (QA/QC) on the spatial data they added or manipulated. The QA/QC process includes identifying gaps, overlaps, and slivers in the SFP shapes. SFP Editors must have a NIFC AGOL account with at least <u>Data Editor</u> access and must have experience with ArcGIS Pro and editing services using an Offline Copy. Typically, a fire GIS person would serve in this role.

SFP Approvers – A group of users that are responsible for approving SFP shapes created, edited, or deactivated by SFP Shape Editors. SFP Approvers must have a NIFC AGOL account with at least <u>Data Editor</u> access. Typically, a national or regional fire planner would serve in this role.

Accessing the SPF Experience Builder and Services

The new Spatial Fire Planning data editing application and data services are hosted on the <u>NIFC</u> <u>ArcGIS Online Organization</u> (NIFC AGOL Org). To gain access, one must first login with their NIFC AGOL account credentials. If one does not have a NIFC AGOL account, one may be requested here: <u>NIFC Org New Account Request Form.</u>

- For information on filling out the NIFC AGOL Org Account Request form, visit the <u>NIFC AGOL</u> form topic.
- For questions regarding the NIFC AGOL Org, contact <u>wildfireresponse@firenet.gov</u> and allow 24 business hours for a response.
- If planning on serving as a SFP Data Manager, Shape Editor, or Approver, make sure you are assigned the Data Editor role within the NIFC AGOL Org at the very minimum. For more information on the available roles within the NIFC AGOL Org, read through the <u>Rules of</u> <u>Behavior and Publishing Guidelines</u>.

Once a NIFC AGOL Org account is established, additional group access might be required depending on one's role in the SFP process. If a user plans to only reference national SFP data, no additional group access is needed (SFP Viewer). If a user plans to contribute to the development, management, and/or approval of SFP shapes and language, additional group access is needed (SFP Data Manager, SFP Editor, SFP Approver). The table below outlines the roles assigned to each AGOL



group. It's important to understand the roles needed, before requesting access to a SFP AGOL group.

		NIFC AGOL Org - SFP Groups						
		SFP Viewer (Any NIFC AGOL Org Member)	Spatial Fire Planning - Data Manager Group	Spatial Fire Planning - Shape Editor Group	Spatial Fire Planning - Approver Group			
	View National SFP Data	х	х	x	x			
	Add/Edit Language		х	x	x			
	Activate/Deactivate Language		х	x	x			
	Add/Edit Shape Categories (CO/SA)		x	x	х			
Roles	Add/Edit Shape Labels		x	x	x			
Roles	Add/Edit Shape Descriptions		x	x	х			
	Create New Shapes			×	х			
	Edit Existing Shapes			×	х			
	Activate/Deactivate Shapes			x	x			
	Approve Shapes				х			

To request access to the correct SFP AGOL group(s), utilize the links in the table below. Groups exist for both the training and production versions of the SFP process. Once navigated to a particular group's home page, select 'Join Group' on the right side of the browser window. It is recommended that those requesting Data Manager, Shape Editor, or Approver privileges have experience with editing data in feature services. WFM RD&A or approved agency staff will review the access request and will approve if deemed appropriate. Please allow 24 business hours for a response.

SFP AGOL Group	Training Access Links	Production Access Links						
SFP Viewer	No Access Request Needed Once NIFC Org Account Established							
Spatial Fire Planning -	https://nifc.maps.arcgis.com/home/group.html?i	https://nifc.maps.arcgis.com/home/group.html						
Data Manager Group	d=475acae405ab4ba49352f7c96e6823b4	?id=1002df3ef04a4e11b3a23c2dbb0a535f						
Spatial Fire Planning -	https://nifc.maps.arcgis.com/home/group.html?i	https://nifc.maps.arcgis.com/home/group.html						
Shape Editor Group	d=1e9bf27e2ada4351a1fc1446f9fe8ba3	?id=cb3f8a75c87040e48cf8de3c5826a1f6						
Spatial Fire Planning -	https://nifc.maps.arcgis.com/home/group.html?i	https://nifc.maps.arcgis.com/home/group.html						
Approver Group	d=fe1976e098e141369b5ce64cf72e7dc4	?id=41cf07868234418585eeb366f517cd7f						

Spatial Fire Planning - Data Manager Group	Overview	Content	Members
NIFC AGOL Group for fire planners and fire management providing Spatial Fire Planning information, including fire planning language and shape categorization			group web app v



Once proper group access is granted, one can navigate to the training and production SFP data services and editing applications using the table below:

Item Name	Item Type	Item Description	NIFC AGOL Org Sharing	SFP Group Access	Item Description URL	Rest Endpoint	Service Settings	Service View Filters
ISFPS Hub	Hub Site	A landing page for all SFP content.	Org-wide	Viewer, Data Manager, Shape Editor, Approver	https://isfps-nifc.hub.arcgis.com/			
SFPS Training App	Experience Builder	An experience builder application used to view SFP language and shapes; edit SFP language; edit SFP shape categories, labels, and descriptions; and approve SFP shapes in the training environment.	Org-wide	Viewer, Data Manager, Shape Editor, Approver	https://experience.arcgis.com/experience/fd5 ba5e9d8144747b8dec6b475027c9a			
Training_WFMRDA_SFP_ ReadOnly	Feature Service View	A read only feature service that depicts SFP shapes and language available in the training environment.	Org-wide	Viewer, Data Manager, Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html ?id=a690e358ad0342338aba501db0d81892	https://services3.arcgis.com/T4QMspb fl_g3qTGWY/arcgis/rest/services/Trainin g_WFMRDA_SFP_ReadOnly/FeatureSer Ver	Edit Disabled Sync Enabled	
Training_WFMRDA_SFP_ EditLanguage	Feature Service View	An edit feature service that allows users to edit SFP language available in the training environment. It is referenced within the SFP Training App via the 'Edit Language' tab.	Specific Groups	Data Manager, Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html 2id=833b3dc72d3341cebca10c2ee4dda96c	https://services3.arcgis.com/T4QMspb fl_g3qTGWV/arcgis/rest/services/Trainin g_WFMRDA_SFP_EditLanguage/Featur eServer	Edit Enabled (Add, Update – Attributes and Geometry) Sync Disabled	
Training_WFMRDA_SFP_ EditShapeAttributes	Feature Service View	An edit feature service that allows users to edit SFP shape categories, labels, and descriptions available in the training environment. It is referenced within the SFP Training App via the 'Edit Categories' tab.	Specific Groups	Data Manager, Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html ?id=ec9d1d6d985d47f184688874e1775441	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/rest/services/Trainin g_WFMRDA_SFP_EditShapeAttributes/ FeatureServer	Edit Enabled (Add, Update – Attributes Only) Sync Disabled	
Training_WFMRDA_SFP_ EditShapeGeometry	Feature Service View	An edit feature service that allows users to edit SFP shape geometry available in the training environment. It should be referenced within ArcGIS Pro.	Specific Groups	Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html ?id=28efb3a7aef94c53998e6ab51ca307a3	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/rest/services/Trainin g_WFMRDA_SFP_EditShapeGeometry/ FeatureServer	Edit Enabled (Add, Delete, Update – Attributes and Geometry) Sync Enabled	
Training_WFMRDA_SFP_ ShapeApproval	Feature Service View	An edit feature service that allows users to approve SFP shapes referenced within the SFP Training App via the 'Shape Approval' tab.	Specific Groups	Approver	https://nifc.maps.arcgis.com/home/item.html ?id=c490dfeecc694fcd884fd369450d9cc9	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/rest/services/Trainin g_WFMRDA_SEP_ShapeApproval/Featu reServer	Edit Enabled (Update – Attributes Only) Sync Disabled	
SFPS Production App	Experience Builder	An experience builder application used to view SFP language and shapes; edit SFP language; edit SFP shape categories, labels, and descriptions; and approve SFP shapes in the production environment.	Org-wide	Viewer, Data Manager, Shape Editor, Approver	https://experience.arcgis.com/experience/f2b 1a5d2e12d42638ed1198cfd5d0352			
WFMRDA_SpatialFirePla nning_ReadOnly	Feature Service View	A read only feature service that depicts SFP shapes and language available in the production environment.	Org-wide	Viewer, Data Manager, Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html ?id=134d1f69f8bb41ba97d80d05d1ccac2c	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/rest/services/WFMR DA_SpatialFirePlanning_ReadOnly/Feat ureServer	Edit Disabled Sync Enabled	Fire Planning Shapes 'Deactivation Date' is Null AND 'Activation Date' is Not Null AND 'Approved' is Yes Fire Planning Language 'Deactivation Date' is Null AND 'Activation Date' is Not Null



WFMRDA_SpatialFirePla nning_EditLanguage	Feature Service View	An edit feature service that allows users to edit SFP language available in the production environment. It is referenced within the SFP Production App via the 'Edit Language' tab.	Specific Groups	Data Manager, Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html ?id=e00261518181477fa087a7610d403898	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/rest/services/WFMR DA_SpatialFirePlanning_EditLanguage/ EeatureServer	Edit Enabled (Add, Update – Attributes Only) Sync Enabled	
WFMRDA_SpatialFirePla nning_EditShapeCategori es	Feature Service View	An edit feature service that allows users to edit SFP shape categories, labels, and descriptions available in the production environment. It is referenced within the SFP Production App via the 'Edit Categories' tab.	Specific Groups	Data Manager, Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html ?id=1bced192a3264257b2a54e0ba50cdba3	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/rest/services/WFMR DA_SpatialFirePlanning_EditShapeAttri butes/FeatureServer	Edit Enabled (Update – Attributes Only) Sync Disabled	
WFMRDA_SpatialFirePla nning_EditShapeGeomet ry	Feature Service View	An edit feature service that allows users to edit SFP shape geometry available in the production environment. It should be referenced within ArcGIS Pro.	Specific Groups	Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html ?id=6c8243220e4e48fe82ac298c8df444cd	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/rest/services/WFMR DA SpatialFirePlanning EditShapeGeo metry/FeatureServer	Edit Enabled (Add, Update – Attributes and Geometry) Sync Enabled	
WFMRDA_SpatialFirePla nning_ShapeApproval	Feature Service View	An edit feature service that allows users to approve SFP shapes referenced within the SFP Production App via the 'Shape Approval' tab.	Specific Groups	Approver	https://nifc.maps.arcgis.com/home/item.html ?id=ac5c533e5a554faeaa59da8169a05feb	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/rest/services/WFMR DA SpatialFirePlanning ShapeApprova //FeatureServer	<i>Edit Enabled</i> (Add, Update – Attributes and Geometry) <i>Sync Disabled</i>	
WFMRDA_SpatialFirePla nning_Misfits_ReadOnly	Feature Service View	A read only feature service that depicts planning language and shapes collected through the old planning method in WFDSS that were not transferred over to the new SFP Services because they did not meet the minimum transfer criteria.	Specific Groups	Data Manager, Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html ?id=43b8771d8182436eb09afcc62509d00d	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/test/services/WFMR DA_SFP_Misfits_ReadOnly/FeatureServ <u>er</u>	Edit Disabled Sync Disabled	
WFMRDA_SFP_Misfits_E dit	Feature Service View	An edit feature services that allows users to flag when misfit shapes and language have been manually transferred over to the new SFP Services.	Specific Groups	Data Manager, Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html ?id=af301b6688da422b973f3d390ff9486e	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/rest/services/WFMR DA_SFP_Misfits_Edit/FeatureServer	Edit Enabled (Add, Update – Attributes Only) Sync Disabled	
WFMRDA_SFP_OtherUnit Shapes_ReadOnly	Feature Service View	A read only feature service that depicts Other Unit shapes exported from WFDSS Classic.	Org-wide	Viewer, Data Manager, Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html ?id=476a33903b374f7f934a423c7d1199f5	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/rest/services/WFMR DA_SFP_OtherUnitShapes_ReadOnly/E eatureServer	Edit Disabled Sync Disabled	OtherUnitShapes_ point/line/poly DeactivationDate is blank
WFMRDA_SFP_OtherUnit Shapes_Edit	Feature Service View	An edit feature service that allows a user to make edits to Other Unit shapes exported from WFDSS Classic.	Specific Groups	Data Manager, Shape Editor, Approver	https://nifc.maps.arcgis.com/home/item.html ?id=92839e4e795a434899c6146cfe08d40f	https://services3.arcgis.com/T4QMspb fLg3qTGWY/arcgis/rest/services/WFMR DA_SFP_OtherUnitShapes_Edit/Featur eServer	Edit Enabled (Add, Delete, Update – Attributes Only) Sync Disabled	



Training and Production Interfaces

In the new SFP process, two application environments are available to users:

- **The training environment** which serves as a place in which users can familiarize themselves with SFP data and the editing process. SFP data stored within the training environment is not operational and is for training purposes only.
- **The production environment** which serves as the fully functional system in which live SFP data is stored, managed, and shared with end-users and wildland fire applications for operational use.

Data Service Components

The four main categories of SFP views (ReadOnly, EditLanguage, EditShapeAttributes, and EditShapeGeometry) have the same underlying data components, a polygon layer titled FirePlanningShapes, and a one-to-many relationship table titled FirePlanningLanguage.

The FirePlanningShapes layer includes the spatial extents in which fire planning language/guidance apply. The dataset includes the four primary SFP shape types.

- Unit Boundaries (Unit)
- Sub-Unit, Non-Overlapping Shapes (SNOS)
- Sub-Unit, Overlapping Shapes (SOS)
- Multi-Unit Shapes (Multi)

The FirePlanningLanguage table includes approved guidance from Land, Resource, and Fire Management Plans as well as other guidance related to local values of interest. This table is a oneto-many relationship table, which allows for the depiction of complex spatial relationships. In this case, this one-to-many relationship allows users to track when many pieces of language are assigned to a single SFP shape. The shapes available within the FirePlanningShapes layer are linked to language records in the FirePlanningLanguage table through the GlobalID and fsglobalid fields.



Viewing Spatial Fire Planning Data

SFP data can be viewed using GIS desktop software (like <u>ArcGIS Pro</u>), cloud-based mapping solutions (like <u>ArcGIS Online</u>), or within the SFPS App. The read-only SFP feature services include the following subset of shapes and language:

- SFP Shapes where 'Approved' = Yes, 'Deactivation Date' is null, and 'Activation Date' is not null
- SFP language where 'Activation Date' is not null and 'Deactivation Date' is null



Viewing SFP Data in the SFPS App

