Wildland Fire Decision Support System (WFDSS) & Spatial Fire Planning Process

Background

Fire planning is evolving in the federal fire agencies. Agencies are looking to move away from static plans that are hundreds of pages long. The Department of Interior agencies have been testing Spatial Fire Management Plans (SFMP). The Forest Service Fire Management Plan (FMP) continues to tie back to the Land and Resource Management Plans (LRMP). All agencies continue to struggle with how to display their direction spatially.

Issue

WFDSS users are evolving from a Fire Management Unit (FMU) process that only allowed for non-overlapping spatial data to visually depict land management plan direction. The user community has also been asking for a way to "turn objectives and requirements on and off" to avoid duplication or the inclusion of a requirement that only affects a small portion of a FMU.

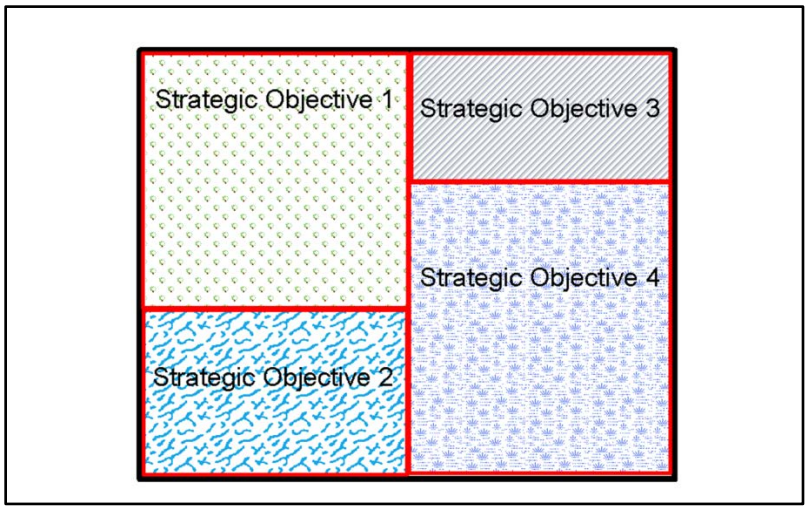
Solution

In order to meet the needs of various SFMP efforts and user concerns, WFDSS has developed a spatial fire planning process. The new process allows users to spatially describe their strategic objectives and management requirements. There are two layers of shapes available for users to describe their direction: Strategic Objective shapes and Management Requirement shapes.

Strategic Objective Shapes

Strategic objectives are broad statements, specified in land and resource management and fire management plans. They not only identify changes in water, soil, air, or vegetation from the present to proposed conditions, but can also describe an existing resource condition that should be maintained. Objectives deal with large areas over long time periods and project intended outcomes of management activities that contribute to the maintenance or achievement of desired conditions. The strategic objective shape layer is intended to spatially represent the strategic objectives of the landscape and the unit boundary shape.

Figure 1: Square Containing Four Strategic Objectives



The intent of the strategic objective layer was to allow users to utilize shapes other than FMUs to visually depict their fire management direction. Although these shapes are called "strategic objectives", they can represent one or many of the following terms:

- Unit boundary,
- FMUs,
- Fire Workload Areas,
- Management Areas,
- Management Prescription Categories,
- Newly derived strategic objective shapes.

Shapes should be used to spatially represent what is written in your plans that provide fire direction and are NEPA compliant.

Users manage strategic objective shapes just like FMU shapes. Units submit them with the same attributes to their agency GIS representatives. The agency representatives then forward them to WFDSS. The strategic objective shapes are used to build a unit outline shape for each unit.

Strategic Objective Examples

Each unit's language from their land and resource management plans will vary. Most units will find that the direction from their plans likely fits into one or more of these categories:

- Suppress fires at smallest size,
- Suppress fires considering cost and or values at risk
- Manage fires for resource benefit
- Preplanned decision to monitor all fires for protection or restoration.

Note that these are examples only; units that choose to use the new spatial fire planning process will be able to use their unit's own exact language for their Strategic Objectives. The following examples

illustrate that units will likely have several categories of strategic objectives within their land management and fire management plans.

Examples:

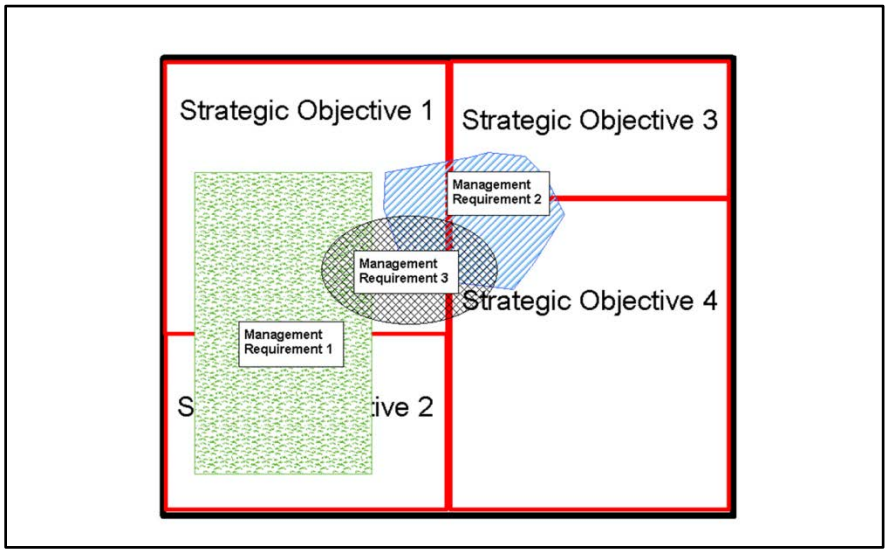
- Manage 60% of natural starts for resource benefits.
- Contain 90% of all unwanted wildland fires at less than 10 acres in size within 2 operational periods.
- Manage fires for resource benefits when conditions and fire start location warrant.

Management Requirement Shapes

Management Requirements are derived from land and resource management plan and fire management plan standards and guidelines information. They represent the recommended technical and scientific specifications for management activities and/or potential actions to help achieve objectives across broad areas in general terms. They provide the foundation, framework, and limitations/challenges for potential management activities. Management Requirements are not commitments or final implementation decisions.

Management Requirement shapes can overlap multiple Strategic Objective shapes and or overlap other Management Requirement Shapes as shown in this simplified example.

Figure 2: Square Containing Four Strategic Objectives and Three Management Requirements



Units control their own Management Requirement shapes. They can upload them or draw them directly in WFDSS. Written direction supports Management Requirement shapes. The process to add Management Requirements shapes and direction is similar to the current process used to create unit shapes. Because units can manage their own Management Requirement shapes, these shapes can be used to represent temporal or condition based requirements. This allows a unit's direction to change throughout fire season as species of concern migrate, or drought conditions worsen or improve to name a few examples.

These shapes can be used to, but are not limited to the following:

- Consideration & Constraints
- Required actions in specific areas
- Equipment and retardant restrictions in specific areas
- Planned & implemented fuel treatments and details
- Desired future condition objective that affects a small area of the unit without conflicting with other strategic objectives they may overlap

To summarize:

- Management Requirements (MRs) can overlap.
- MRs must be located within a unit's boundary. A unit's boundary is determined by the strategic objective shapes.
- If MRs are uploaded or drawn in WFDSS and do not fit the unit's boundary, WFDSS clips them to the boundary for the users.
- MRs should provide clear direction to the managers as to the requirements for the area defined by the shape, and they can be updated by the unit at any time.

Summary

The spatial fire planning process may provide units with a better visual depiction of their plans direction and allow the unit to have greater control over their data

- The new spatial fire planning process will be available to use in WFDSS by the end of February 2013.
- The new process is completely optional.
- Units are encouraged to test new spatial fire planning process in the WFDSS training environment before switching the Production environment. Units will be able to convert the currently loaded FMUs shapes to Strategic Objective shapes. If you change to Spatial Fire Planning in the training environment:
  - The current FMU shapes will be considered Strategic Objective shapes
  - Codes associated with the shapes will be activated
  - Codes not associated with shapes will be de-activated
  - Strategic Objectives associated with a de-activated code will be de-activated
  - Activated Management Requirements associated with codes will be de-activated
  - In case you do want to go back to the FMU planning process, consider exporting the Strategic Objectives and Management Requirements prior to changing the unit's planning process.
- If you are in the training environment, the above actions only occur in that environment. Production remains intact until you complete the same process in the production environment.
- Units can use spatial fire planning if they feel it better represents their plans' direction. Units who want to continue using the current Fire Management Unit planning process can continue to do so.