FPA Getting Started Guide – FY2010 Submission Year

This Guide describes the steps needed to begin initial data entry and data verification in the Fire Program Analysis (FPA) system for the FY2010 submission year analysis to support the Federal Agencies FY2012 budget development. This document describes all steps to complete before running a validation; it does not discuss the validation process. Review the **Preparing for Entering the System** LiveMeeting™ before you begin working with this Guide.

The FPA Getting Started Guide contains these sections:

Share your comments with us to improve the content of this Guide. Feel free to send information/suggestions to fa_fpa@nifc.blm.gov. Thanks in advance for your help!

Copy Last Year's Dataset

☐ In **Select Team and Analysis**, select your FPU and the analysis named either **Grid Association Test–CG** or **Grid Association Test sw** with a status of **Working**.

☐ If your **Grid Association Test–CG** or **Grid Association Test sw** file shows a status of **Initial**, you will need to contact Cal Gale at 208-559-1124 or Sue Weber at 208-830-8614.

☐ Click the **Copy** button. In the pop-up box, rename the analysis to something like: **Do Not Delete – 2012 Master**. The status automatically displays as **Initial**. This is your FY2010 submission year master copy. Do not make edits to this master copy.

☐ Copy the **Do Not Delete – 2012 Master** and name it something like **2012 Working Master,** or another name that is meaningful to you. You'll use this working master to do all your FY2010 submission year work.

See also:

Select Team and Analysis – *FPA User Guide*
Naming Conventions for FPA Options and Analyses – Whitepaper

Associate FWAs to the Working Master Analysis

If your FPU made changes to the FMU / FWA shapefiles (including name changes) prior to this year's analysis, re-enter your FWA association inputs for those FMUs/FWAs. This includes FWA attributes, FWA to Dispatch Location associations, Dispatch Logic associations, FWA Delays, fuel treatment FWA locations (**Alternatives>Fuels Options>Treatment Details>Edit**), and so forth.

☐ Go to **Input Data>FWAs>Associate to Analysis**, select your FWA set for association in the **Select FWA for Association** table. In the **Review Changes** table, compare the **Old FWA Set** to the **New FWA Set**. Changes are shown with Red "minus" and Green "plus" icons next to those FWAs that you changed previously in your FWA layer. FPA recommends you print off a "screen capture" of the changes. Then click **Associate FWA Set** button.

☐ Go to **System and Status> FWA Process>FWA Sets**. Select the FWA set that you just associated in the **FWA Sets** table. Check the status of the processes listed in the third table, **FWA Process Status**. When the status for all processes is **Completed**, then the FWA set has been associated. You can also see that the analysis changes from **Initial** to **Working** on the **Welcome>Select Team and Analysis** page. All parts of the application are now available for editing.

☐ If the status still displays as **Initial** in the **Select Team and Analysis** page**,** it means the system did not have access to all the enterprise data it needed to reset the full database (such as Landscape files, Ignition files, agency boundary layer, etc.). If this does not complete the process, email the FPA Help Desk at fire_help@fs.fed.us.

In the meantime, you can still access your FPUs dataset and work in all folders in the **Input Data** area of the navigation bar. This includes the **Data Input>Define Resources**, **Define Dispatch Locations**, or **Define FWA** screens. You cannot complete any edits under **Fuels Options** or **Run Models**.

See also:
Select Team and Analysis – *FPA User Guide*
Associating Fire Workload Areas (FWAs) to an Analysis – *FPA User Guide*
Data Input: Resources & Dispatch Locations - LiveMeeting
Defining Resources – *FPA User Guide*
Managing Dispatch Locations – *FPA User Guide*
Fire Workload Area (FWA) Process – *FPA User Guide*
Managing Fire Workload Area (FWA) and Fire Attributes – *FPA User Guide*

Review and Update Data

As FPU data was migrated from the previous analysis, all associations, dispatch logic tables, resources, and so forth, were copied to the new working year. If you made changes to FWAs from last year that include changing the name/spelling, or adding new FWAs to your FWA set, re-enter information for those FWAs that: a) did not exist in the previous year's FWA set, and b) review and update migrated FWAs. Follow these steps to ensure the inputs are correct. It will be helpful to have a copy of the input report from the last analysis available for reference.

Review and Update Team and FPU Information

☐ Go to **Select Team and Analysis.** Select your FPU and your analysis. Click **Open**.

☐ Go to **Set Up FPU>FPU Agencies**. Review and update as needed. Changes made to some of the NWCG unit identifiers may also require your attention. When you review the list of partners, participants, and cooperators, if there is an asterisk (*) by the unit ID, then NWCG has changed its identifier and you will need to update it. The new identifier will be in the drop-down list.

☐ Go to **Set up FPU>Define Team>Review** and update your team members' role as needed. Remember, only the FPU Administrator can complete the edits on this page.

See also:

Select Team and Analysis – *FPA User Guide*
Assigning Agencies and their Roles to an Analysis – *FPA User Guide*

Review and Update "Input Data"

☐ Go to **Input Data>Define Dispatch Location**.

This is the one instance where FPA recommends you do not follow the order of the navigation tree (left side column) in the FPA system.

Review and edit your dispatch locations. Some areas to check include:

- ☐ Make sure your **Longitude** value has a minus sign (-) in front of it. Some dispatch locations downloaded from the agencies' data bases did not have validation steps to ensure all longitudes were correctly located in the Western hemisphere.
- ☐ The **Callback Delay** is user defined, but the default is set to 120 minutes. Enter the time (in minutes) that it takes for resources to be staffed during non-duty hours (so personnel can return to duty and begin travel), or accept the default of 120 minutes. This setting applies to all resources at the dispatch location regardless of agency ownership. Although the default is set to 120 minutes, FPUs should verify that this value is not too long for some dispatch locations.

☐ Go to **Input Data>Define Resources**. Review and **edit** as needed. Some areas that need special attention are:

- ☐ For each budget planning year, FPA models ignitions within preparedness staffing season; the use of "Shoulder Season" fire resources is no longer necessary. Delete or show as unavailable any shoulder season resources that responded exclusively to fires before and after preparedness staffing season. This can be done two ways:
  1. Delete the individual resources. Go to **Input Data>Define Resources>Available Resources** table, click on the resource you want to delete, and click **Delete**. Remember, a deleted resource is no longer available to be borrowed. It is the responsibility of each FPU to make sure resources they borrowed are still available in the FPU they borrowed from. Communicate with your neighbors regarding borrowed resources.

2. A more conservative approach would be to keep the shoulder season resource in the system and turn off their availability to respond to an option. In the FPA program, go to **Alternatives>Preparedness>Preparedness Options> Resource Assignment per Preparedness Options** table. Click Edit, and remove the resource association from preparedness options by clicking under the appropriate column and changing the fire resource status from "**a**" or another letter (letter indicates the version, such as "a", "b", "c", and so forth) to "**—**" (for unavailable). This approach leaves the resource in the system in case you might want to include it or edit it in future analyses.

☐ Review the resources that have a check mark under the "**Current**" column. Entering a check in the "**Current**" box makes that resource available for use to adjoining FPUs (also known as "Borrowed Other Team Resources"). For the FY2010 submission year, FPA recommends that you mark as "**Current**" the version of those fire resources that were funded in 2009 ("had wheels in the parking lot").

The **Input Data>Define Resources>Available Resources: Current** column has no direct system relationship with **Alternatives>Preparedness>Preparedness Options>Option name**: .current. Showing a fire resource as "Current" in Define Resources does not automatically enter that resource as "available" in the .current Preparedness option.

☐ Review the resources entries under the "**Daily Staffing**" column. This figure represents the number of people who staff the resource each day. Make adjustments to this figure if, in FY2009, you increased or decreased the number of people who actually staffed your fire resource "on the ground". Also make corresponding changes to **Total Positions** and **Total FTEs**. Remember, for planning the Federal budget, **Total Positions** and **Total FTE's** entries are <u>not</u> required for Cooperator-owned resources.

☐ Update the **Resource Annual Cost**. Remember that annual costs include any associated personnel costs and vehicle fixed operating rates (FOR). Use your .current baseline budget figures that are provided by your agency budget officers. Make sure those dollar amounts are distributed across the prevention, leadership, support, and resources as appropriate. The Comments box is a great way to keep track of the changes you make.

☐ Review the Percent (%) Available for your fire resources. Consider the following guidelines:

- For Cooperator and Participant resources, if a fire resource shows up consistently, they would have a higher percent available than resources whose response is not consistent or are frequently unavailable due to other commitments.
- If a Partner resource is funded primarily by fuels dollars, consider how often the resource is available to respond to fires (as opposed to performing their fuels duties) and set the % accordingly.
- If a Partner resource is staffed by "militia" is it regularly available with a short delay? If so, set the percent available at or near 100%. If the resource is available for only part of the time, adjust the percent available as determined locally.

☐ Other entry fields that you will want to review include **Season (**and **Hours) Begin** and **End, Day of Week Start** and **End,** and **Vehicle Cap Cost** (capital investment cost for new resources).

☐ Go to **Input Data>FWAs>Attributes** and edit as needed. Areas to pay special attention to include:

☐ **Include in Analysis** check box: Check this box to include this FWA in the analysis.

☐ **Discovery Size**: In FPA, the intent of Discovery Size is to represent the size of the fire when it is first reported. It is not the size of the fire when the first responders arrive at the scene. In FPA the smallest size is one hundredth of an acre (.01 acre). FPA suggests using one hundredth of an acre (0.01) for those timber fires which are typically spot fires or single trees hit by lightning. If you enter one tenth of an acre as the initial size at discovery, the fire begins at 10 times the actual size of the spot fire or single tree. If it's in fuel model 165 (very high fuel load timber & understory) you have greatly increased the chance of losing this fire.

Proportions for Discovery Size:

- One hundredth of an acre (0.01) is about a 20' by 20' fire or 435.6 square feet. This is FPA's smallest input for discovery size.
- A tenth of an acre fire (0.10) is approximately 66 feet by 66 feet or 4.356 square feet. A Discovery Size for a 0.10 acre fire is large, especially in timber.

☐ **Exceed Simulation Limits (ESL) Time and Size**: The simulation limit is the duration (in minutes) or size (in acres) that the Initial Response (IRS) model will simulate the growth of the ignition. The default for time is 1,080 minutes (18 hours). The default size is 300 acres. When the ignition has been modeled, but not contained for the ESL period of time, or has grown to ESL size, it is tagged as having reached the limits of the FPU's preparedness capability to contain. IRS then stops modeling this ignition, and hands it off to the Large Fire Module for continued modeling as a suppression action that does not continue to "tie up" local FPU resources. The preparedness resources that had been responding to this ignition are then available to respond to other fires using the FWA's various delays and dispatch logic design.

FPA recommends that you use your Land/Fire Management Plans and/or associated plans (Fire Danger Operating Plans, Dispatch Pre-Attack Plans, or computer aided dispatch tools) as guidance when setting the time and size limits. Also, local knowledge is invaluable in determining the size and time limits.

☐ **Head versus Tail versus Parallel Attack**: The Head Attack entry specifies the percent of fires in the model where initial response fire resources attack a fire at the head rather than the tail. For the purpose of modeling, FPA recommends against using a Tail Attack, and instead designating all fires as Head Attack. If the IRS model fails to contain the fire using a Head Attack (usually because the Flame Length (FL) or Rate of Spread (ROS) is too high), the system automatically retries using a Tail Attack and no time is lost.

The advantage of using Head Attack is that it allows the model to catch small fires before they spread into the crowns in Fuel Model 165 (very high fuel load timber and understory).

☐ **Damaging FIL**: The concept behind Damaging Fire Intensity Level (FIL) is different than other entries in the FWA Attributes section. The Damaging FIL input has no effect on the behavior of the model. It is used as a threshold to calculate Performance Measures #6 and #7.

For Wildland Urban Interface (WUI), the planner needs to remember that the damaging FIL applies to the surrounding natural resources and not the housing structures. Determine the average value above which fire adversely affects resource management. One way to derive this input is to think in terms of applying prescribed fire to the area surrounding WUI. Derive the maximum acceptable FIL when applying prescribed fire to that area. Unwanted fires are those with FIL values above your acceptable prescription – your Damaging FIL.

☐ **WFU Attributes**: The Wildland Fire Attributes table now has three new choices in addition to Burn Index for defining the Wildland Fire Use index. The four choices are Burn Index (BI), Rate of Spread (ROS), Fire Intensity Level (FIL), and Flame Length (FL). The value is used to accept or reject a fire event as a potential WFU candidate fire based on the fire conditions at the time the ignition occurred.

☐ **Diurnal Rate of Spread (ROS) Adjustment**:

Making adjustments to the Diurnal Rate of Spread Coefficient should occur only during the validation phase. However, FPA suggests you review the following LiveMeetings prior to editing these settings.

Validation Basics LiveMeeting
Completing Validation Runs
Validation Reports LiveMeeting

☐ FPA strongly recommends that you review the existing diurnal coefficient settings. Remember, Diurnal Coefficient adjustments affect ALL fuels in the FWA. The coefficient is used to adjust the calculated rate of spread for the hour specified based upon user input. FPA calculates ROS for each fire event using the 1300 hour (local time) weather observation. This feature allows you to refine your fire behavior ROS relative to the 1300 hour and spread rate. Talk with local fire managers to gain local expert knowledge about how fires tend to burn in the FWAs at different times of day. Local terrain features and winds can affect how fires burn at different times of day.

To help you develop diurnal coefficients, check the **Diurnal Coefficient Calculator**. For more information on how to use the calculator, please view the following short webinar, **Calculating Diurnal Coefficients**

When using the calculator remember you are only processing 90% of the fire workload, so adjust your dates to reflect the bulk of fire activity in your FWA. When developing and then applying diurnal coefficients to adjust ROS, be careful not to minimize ROS values so that adding or removing fire resources from those dispatched in the dispatch logic table result in no change in the IA Success percentage and/or the acres burned for the contained fires.

☐ **Fuel Model Rate of Spread Adjustment**:

Making adjustments to the **Fuel Model Rate of Spread** should take place during the validation phase. FPA suggests that you review the LiveMeetings prior to editing these settings.

☐ This new feature allows you to change the rate of spread for up to 10 Fuel Models in each FWA. Each fuel model that you modify can react like a different fuel model.

For example, if GR1 or 101 is one of the existing fuel models in your FWA, you can alter its rate of spread (ROS) to more closely match the fire behavior that you are accustomed to seeing on the ground.

Decide if, and what, fuel models need rate of spread adjustments. Expect that fuels with a flashy nature will require a larger adjustment than other fuels. Not all fuels may need an adjustment. *Remember that the ROS adjustment acts as a multiplier to the Diurnal Coefficient and applies to ALL Diurnal Adjustments.*

You must first select the Edit button at the bottom of the Fuel Model Rate of Spread Adjustment section. You will get a drop-down menu under the Fuel Model column with a list of all the fuel models associated with that FWA. Select the fuel model you want to modify. In the Coefficient box enter a number from 0.01 to 5.0 to change the rate of spread (ROS) of that fuel model. Examples of the impacts of applying a coefficient are:

- Entering a 0.1 reduces the rate of spread by 90%
- Entering a 0.5 reduces the rate of spread by 50%
- Entering a 1.0 keeps the ROS the same.
- Entering a coefficient of 5.0 increases the ROS by 500%

FPA recommends that you adjust the **Diurnal Coefficient** for each FWA, and then make a run **before** making any **Rate of Spread Adjustments** by fuel model.

☐ Go to **Input Data>FWAs>Dispatch Associations**. Edit as needed.

During the first FPA budget planning year, many users associated all dispatch locations to all FWAs. This was the recommended process. It has been discovered that this action has some major pitfalls. An "all-to-all" selection may have the unintended result of sending resources from distances that would normally be used only for extended attack situations – which FPA is not intended to model.

- For example: A dispatch location is associated to an FWA that is many hours away. In this instance, fire resources would travel many hours to the ignition in the distant FWA and work an hour before reaching the system-enforced work shift limit (set at 18 hours). Minutes after their initial dispatch, a fire could start close to their dispatch location. This second fire could quickly exceed simulation limits because all the close resources were traveling to the fire in the distant FWA.
- Many factors influence which resources the model sends to ignitions, based on your inputs. This includes:
    - Whether a dispatch location is associated to an FWA.
    - The number of resources available for dispatch from all associated dispatch locations.
    - The number of producer types specified in the Dispatch Logic required for dispatch to a fire event.
    - The Break Point minimum and maximum values used to define the lower and upper boundaries of Fire Dispatch Levels (FDLs). These values define the fire danger conditions and the corresponding desired maximum number (by producer type) of resources that can be dispatched to a Fire Workload Area (FWA) when a fire occurs.
    - FPA uses available fire resources with the shortest arrival times based upon dispatch location associations, dispatch logic producer types, and specific resource availability.

Things to consider:

- When selecting which dispatch locations to associate to an FWA, consider whether the travel time is reasonable for initial attack.
- Review the management objectives of each FWA. WUI FWAs and FWAs with high resource value may warrant a greater number of Dispatch Location associations.

The Event Details Report provides the calculated travel distance from Dispatch Location to the Travel Time Point.

- **Associating Borrowed Resources**: A common oversight when using FPA is borrowing fire resources from an adjacent FPU, but failing to associate the borrowed resource's Dispatch Location to an appropriate FWA in your FPU. If no association exists, the resource will never be used. The borrowed resource's Dispatch Location needs to be associated with an FWA for the model to use the borrowed resource. This is done in **Input Data>FWAs>Dispatch Associations> FWA to Dispatch Location Associations** table. A borrowed resource's dispatch location is shown in *italics*.

☐ Go to **Input Data>FWA>Dispatch Logic**:

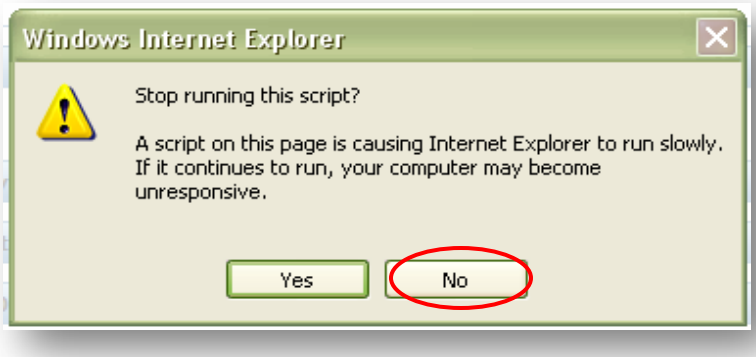
Please review **Managing Dispatch Logic** in the *FPA User Guide* before completing this section.

☐ In general, the FPU planner defines which type of fire resources respond to fire events based on expected fire behavior. The FPA application functions as a "duty officer" who assigns resources to a fire in a specific FWA based on your inputs. For each FWA you enter a dispatch table name and then include a fire danger "index", dispatch levels, and the number and type of resources you will send to fires. This table can be globally applied to the entire FPU, certain FMUs (and their FWAs), or to individual FWAs.

Things to consider:

- An FWA can have only one dispatch logic table associated to it, otherwise fire resources will not respond.
- Each FWA has to be associated with a dispatch logic table, otherwise fire resources are unable to respond to ignitions in this FWA.
- You can create a dispatch logic table for each FWA or a single dispatch logic table that is associated with several or all FWAs. FPA recommends that you use the minimum number of tables possible while meeting your Land Management Plans, Fire Management Plan and/or associated plans (Fire Danger Operating Plans, Dispatch Pre-Attack Plans, or computer aided dispatch tools) guidance.
- Remember, your dispatch logic is held constant across all options. It needs to be flexible enough to accommodate any additional resources you might want to add at the plus 20 option. For lower options such as minus 20 you can disassociate unwanted resources when building those options.
- If a fire resource isn't in the dispatch logic, it is not used.
- When working with dispatch logic during validation, you will be creating several tables and doing multiple validation runs while adjusting your inputs. You may find it helpful to keep a log of your decisions, changes, and observations.

If you have numerous dispatch logic tables, you may get this message when you click on **Input Data>FWAs>Dispatch Logic** asking you to stop running a script. Click on the **No** button. If the message stays on your screen and continues to ask you "Stop running this script?" continue clicking **No** until the message goes away and the dispatch logic screen becomes active. This is a Windows issue and cannot be resolved by the FPA Helpdesk.



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☐ Go to **Input Data>FWA>Define Delays.**

- Note that if the FPU changed any FMU/FWA relationships from the previous year's analysis, those changed FWAs have no delays so delays must be reentered. Your FPU's Input Reports from last year are valuable to rebuild delays (see the FWA Data tab).
- Enter a walk-in delay for each category of resources included in your library.

See also:

Managing Delays – *FPA User Guide*

Managing Dispatch Logic – *FPA User Guide*

Copy Dataset to Working Copy

The "Do Not Delete – 2012 Master" analysis is now your clean dataset for the FY2010 submission year. You are ready to run validations after copying and renaming your "Do Not Delete – 2012 Master" to a name that makes sense to you. For example, "Do Not Delete – 2012 Validation Master." This renamed analysis is now your working copy for the year. Do not delete or edit the "Do Not Delete – 2012 Master" from this point forward. It is your fall-back copy in case you accidently delete your working copy or want to build "what if" analyses for purposes other than modeling your Federal budget submission.

See also:

Select Team and Analysis – *FPA User Guide*