Managing Dispatch Logic Revised 11/12/2008

The following White Papers provide additional detail about dispatch logic.

- Understanding Dispatch Logic in the Initial Response Simulation (IRS) Module

- Understanding Smokejumper Deployment in Fire Program Analysis (FPA) Initial Response Simulation (IRS) Module

- Understanding Helicopter Use in Fire Program Analysis (FPA) Initial Response Simulation (IRS) Module

- Understanding Dozers, Tractor Plows, and Airboats in Fire Program Analysis Initial Response Simulation Module

- Understanding Airtanker Use in Fire Program Analysis (FPA) Initial Response Simulation (IRS) Module

Data Requirements for Managing Dispatch Logic

Enter the following information into FPA before managing dispatch logic:

- FPU/FMU/FWAs as entered in **Set Up FPU > FPU Attributes**, **Set Up FPU > FPU Agencies**, and **Set Up FPU > Define Team** screens.

- Resources as entered into the **Input Data > Define Resources** screen.

- Dispatch Locations as entered into **Input Data > Define Dispatch Locations** screen.

In This Chapter

This chapter discusses:

- Managing Dispatch Logic
  - Adding a New Dispatch Logic Table
  - Creating a New Dispatch Logic Table by Copying an Existing Dispatch Logic Table
  - Editing a Dispatch Logic Table
  - Deleting a Dispatch Logic Table
  - Associating an Existing Dispatch Logic Table with a Fire Workload Area (FWA)

Explaining the Dispatch Logic Table

Use this screen to create and assign dispatch logic table(s) to a Fire Workload Area (FWA).

Dispatch logic tells the Initial Response Simulator the maximum quantity and type of resources needed for initial response to contain fires within the Simulation Limits for each FWA. FPUs may use same Dispatch Logic Table for one or more FWAs.

Type	Low	Moderate	High	Very High	Extreme
Table Name: So WI NW FMU FWS Index: BI Levels: 5					
Views: All					
.Breakpoint	10	21	43	50	(Max)
ATT					
CRW					
DZR					
ENG	1	1	3	3	4
FBDZ					

Table Title Definitions

- **Source Table**: The table from which you want to copy information from existing dispatch logic tables. When you have not yet created a dispatch logic table, the Source Table drop-down list will be blank.

- **Table Name**: User entered name of the dispatch logic table.

- **Index:** The NFDRS index used for the breakpoint settings is Burning Index (BI). BI is one of the most commonly used NFDRS indicies in fire management planning. A reasonable estimate of BI is calculated using the following equation: Flame Length * 10 = BI. Future versions of FPA will use Fire Behavior Prediction System outputs as the values used to identify the breakpoints. Indices you will be able to select from are Rate Of Spread (ROS), Flame Length (FL), or grouping of Flame Length into Fire Intensity Levels (FIL).

- **Fire Dispatch Levels (FDL):** A 3-5 level system of fire behavior assessment intended to assist personnel in determining how many fire resources by Type to be dispatched when a fire starts depending upon its fire behavior characteristics. These are the fire management (business) thresholds used in many fire management plans or dispatch pre-attack plans that drive the number and type of resources needed to manage fires burning at different fire behavior levels in specific FWAs.

- **Breakpoints- Low, Moderate, High, Very High, Extreme:** The user-entered minimum and/or maximum value used to define the lower and upper boundaries of Fire Dispatch Levels (FDLs). The number of breakpoints used for each dispatch logic table depends on the number of FDLs; there are three, four, or five levels. Regardless of the number of breakpoints selected, the system always populates the final column's value at (Max).

Tips

- Use current dispatch plans only for guidance. Expect to make changes from the FPU's actual dispatch plan as you validate the model.

- The number of FDL's with corresponding breakpoints used for each dispatch logic table is three, four, or five. This allows the planner to create dispatch logic tables that match each agency's fire management or dispatch plans. Regardless of the number of FDL's with breakpoints selected, the system always populates the final column's value at (Max).

- A breakpoint of low with a Burning Index (BI) of 20 means all fires with a BI less than or equal to 20.

- A breakpoint of moderate with a BI of 40 means all fires with a BI greater then 20, but less then or equal to 40.

- **Type**: The Resource Producer Type available to respond to a fire event.

- FPA groups producer types in dispatch logic to allow Fire Planners to assign specific numbers and/or types of resources to dispatch locations. By grouping some producer types into dispatch logic types, the Initial Response Simulator (IRS) mimics the action a duty officer would take when assigning resources to a fire in a specific FWA. Specifically, crews, engines, dozers, and tractor plow types are grouped to ensure that the dispatch logic associated with an FWA is simulated using the correct number and type of resource. For example:

  - **Crew (CRW)**: The FPU staffs crews with several Daily Staffing counts (personnel counts) (2, 10, 20, etc.). IRS follows the dispatch logic to find the crew dispatch location that provides the shortest arrival time associated with the FWA. When the crew Daily Staffing level at the shortest arrival time and dispatch location is inadequate to manage the typical initial attack workload, Fire Planners should enter additional crew or crews and create associations between dispatch locations and the corresponding FWA to fulfill the dispatch logic.

  - **Helitack (HELI)**: The system treats helitack as a crew when calculating fireline production capability. FPA defines the number of people on the pre-dispatch crew by the number entered in the **Daily Staffing** field. Fire Planners must provide a helicopter (HEL) in the dispatch logic to transport the helitack crew. When entering data into **Input Data > Define Resources**, Fire Planners must set the desired number (Daily Staffing) of helitack (the smallest number of helitack the system will dispatch is a crew with a Daily Staffing of 2) crews to accomplish the dispatch logic at the appropriate dispatch locations.

  - **Smokejumpers (SMJR)**: The system treats smokejumpers as a crew as far as fireline production capability is concerned. FPA defines the number of people on the pre-dispatch crew by the number entered in the **Daily Staffing** field. When entering data in **Input Data > Define Resources**, Fire Planners must enter a smokejumper aircraft (SJAC) and set the correct number of smokejumper crews required to accomplish the dispatch logic at the appropriate dispatch locations.

> After completing a validation run to understand your data settings, you may want to split large crews (Daily Staffing of 10 or 20) into squads (Daily Staffing of 2) in order to achieve the intended IRS response to multiple fires on days with simultaneous fires. Fire resources that make aerial drops, such as ATT, SCP, SEATS, and Helicopters, require ground based fire resources on the fire prior to the drop producing fireline.

> ▪ **Engine (Engine)**: The FPU agencies use multiple engine types, or engines of the same type with different staffing and/or water capacity. The dispatch logic specifies the number of engines needed to meet the workload at that FDL. Fire Planners must assign enough engines with enough Daily Staffing and water capacity to meet the workload at that FDL, and associate Dispatch Locations for these engines with the corresponding FWAs to fulfill the dispatch logic.

Fire Planners define specific producer types in the **Input Data > Define Resources** screen and associate each resource with a dispatch location.

FPA also groups other producer types typically managed at the national level and/or contract resources. These include

- Heavy Type 1 and 2 airtankers are managed as ATT, Single Engine Air Tankers (SEATS) and Scoopers (CL-215/415) as SCP,

- All helicopter models by type (e.g. Skycranes with Chinooks; Bell 206 with AStar) are managed as Helicopter,

- Dozer types are managed as Dozer,

- Tractor Plow types are managed as Tractor-Plow, and

- Smokejumper aircraft are managed as SJAC.

The model uses lookup data for the production rates for the fire resources that produce fireline. The system defines National Type 1 hotshot crews with a Daily Staffing of 20 personnel.
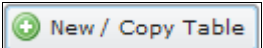
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Adding a New Dispatch Logic Table

1. Select **Input Data > FWAs > Dispatch Logic**.

   Displays the Dispatch Logic table.

2. Click [▶] to open the Dispatch Logic Tables box.

3. Click [⊕ New / Copy Table] to begin creating a new Dispatch Logic table.
   The New/Copy Table box displays.

4. Select a Source Table name from the drop-down list to create a copy, or ignore the drop-down list and build a new dispatch table.

5. Enter a new Table Name.

   The new name may not exceed 50 alphanumeric characters.

6. Select the Index value, (Burn Index (BI)) from the drop-down list.

7. Select the Fire Dispatch Level (FDL) from the drop-down list.

8. Set the breakpoint maximum for each FDL (Low, Moderate, High, etc).

9. For each Producer Type, enter the number of resources to be dispatched at the Low, Moderate, High, Very High, or Extreme FDL.

   Use the scroll bar at the right to enter dispatch values for additional Producer Types.

10. Click [Save Table] to save the new dispatch logic table and update the database.

    Users return to the Dispatch Logic Table.

    Click [Cancel] to return to the Dispatch Logic Table. No database updates occur.

Column Title Definitions

- **Type**: The Producer Type assigned to the Dispatch Logic table.

- **Low**: Enter the number of resources for the Producer Type required for dispatch to a fire event at the Low level.

- **Moderate**: Enter the number of resources for the selected Producer Type required for dispatch to a fire event at the Medium level.

- **High**: Enter the number of resources for the selected Producer Type required for dispatch to a fire event at the High level.

- **Very High**: Enter the number of resources for the selected Producer Type required for dispatch to a fire event at the Very High level.

- **Extreme**: Enter the number of resources for the selected Producer Type required for dispatch to a fire event at the Extreme level.
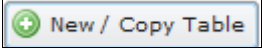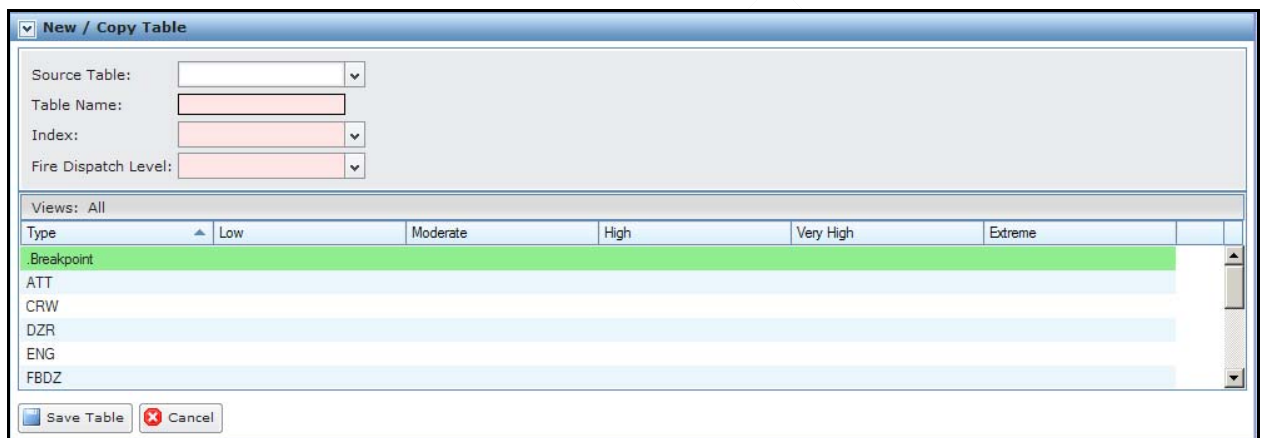
Creating a New Dispatch Logic Table by Copying an Existing Dispatch Logic Table

1. Select **Input Data > FWAs > Dispatch Logic**.

   Displays the Dispatch Logic table.

2. Click [>] to open the Dispatch Logic Tables box.

3. Click [New / Copy Table] to begin creating a new dispatch logic table.

   The New/Copy Table box displays.

4. Select a Source Table name from the drop-down list.

   The Source Table is the existing table from which you plan to copy. FPA bases the new Dispatch Logic table on the selected Source Table.

5. Enter a new Table Name.

   The new name may not exceed 50 alphanumeric characters.

6. Accept the displayed value, or select another Index value from the drop-down list.

7. Accept the displayed value, or select the number of Fire Dispatch Level (FDL) from the drop-down list.

8. Accept the displayed values, or click in the Low, Moderate, High, Very High, or Extreme columns to modify the number of Producer Types to dispatch for each FDL.

9. Click [Save Table] to save the new Dispatch Logic Table and update the database.

   Users return to the Dispatch Logic Table.

   Click [Cancel] to return to the Dispatch Logic box. No database updates occur.

Column Title Definitions

- **Type**: The Producer Type assigned to the dispatch logic table.

- **Low**: Enter the number of resources for the Producer Type required for dispatch to a fire event at the Low level.

- **Moderate**: Enter the number of resources for the selected Producer Type required for dispatch to a fire event at the Medium level.

- **High**: Enter the number of resources for the selected Producer Type required for dispatch to a fire event at the High level.

- **Very High**: Enter the number of resources for the selected Producer Type required for dispatch to a fire event at the Very High level.

- **Extreme**: Enter the number of resources for the selected Producer Type required for dispatch to a fire event at the Extreme level.

Editing a Dispatch Logic Table

1. Select **Input Data > FWAs > Dispatch Logic**.

   Displays the Dispatch Logic Tables.

2. Click ▶ to open the Dispatch Logic Tables box.

3. Click to open the Dispatch Logic table you want to edit.
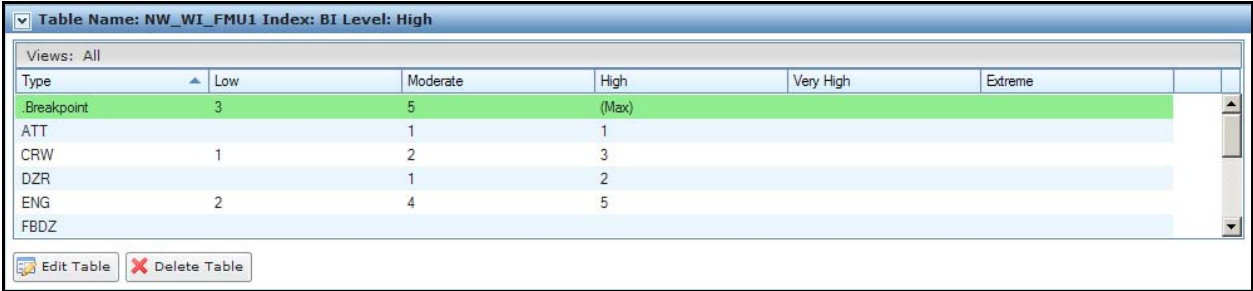
   See Adding a New Dispatch Logic Table for Column Title Definitions.

4. Click **Edit Table**.

   Displays the Table Name edit dialog box.
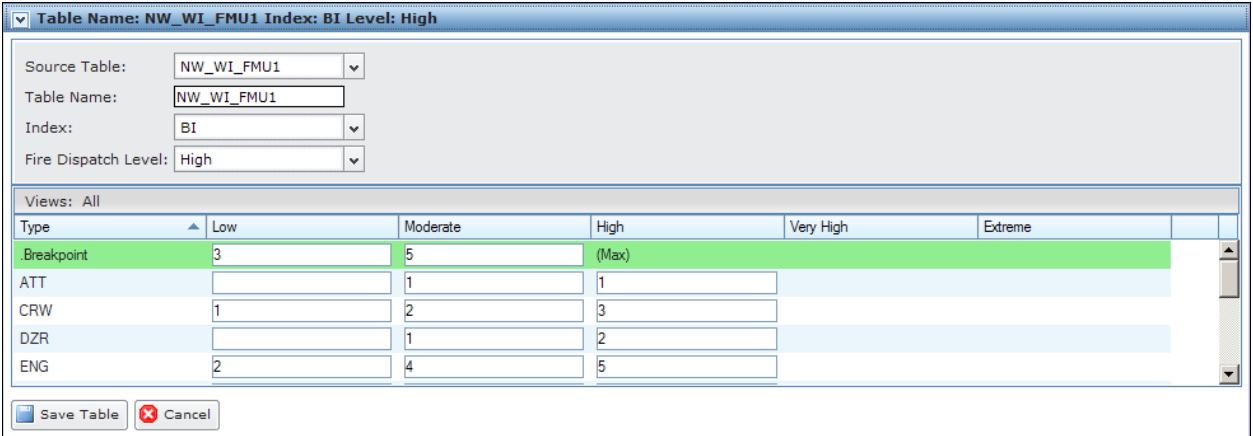
5. Accept the displayed Source Table value, or select another existing dispatch logic table from the drop-down list.
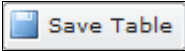
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6. Accept the displayed Table Name, or enter a new Table Name.

    When there are edits to the dispatch logic table name and the table is already associated with an FWA, FPA automatically updates the dispatch logic table to the modified name.

    When there is a value in the Source Table field, you must enter a new unique dispatch logic name not exceeding 50 alphanumeric characters.

7. Accept the displayed value, or select another Index value from the drop-down list.

8. Accept the displayed value or select another Fire Dispatch Level (FDL) from the drop-down list.

9. Accept the displayed values or click in the Low, Moderate, High, or Very High, or Extreme fields to enter modified values for each Producer Type.

    You can also use the TAB key to move between fields.

    New or modified values may not exceed 100 resources for each Producer Type for each FDL.

10. Click [Save Table] to save the new Dispatch Logic Table and update the database.

    Users return to the Dispatch Logic Table.
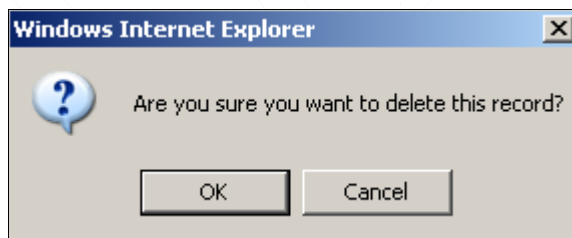
    Click [Cancel] to return to the Dispatch Logic Table. No database updates occur.

Deleting a Dispatch Logic Table

1. Select **Input Data > FWAs > Dispatch Logic**.

    Displays the Dispatch Logic Tables box.

2. Click [▼] to open the Dispatch Logic Tables box.

3. Click to open the Dispatch Logic table you want to delete.

4. Click [Delete Table].

    The delete confirmation box displays.

    Windows Internet Explorer

    ? Are you sure you want to delete this record?

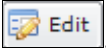   OK   Cancel

5. Click [OK] to delete the Dispatch Logic Table and update the database.

    Users return to Dispatch Logic Tables box.

    Click [Cancel] to return to the Dispatch Logic Tables box. No database updates occur.

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Associating an Existing Dispatch Logic Table with a Fire Workload Area (FWA)
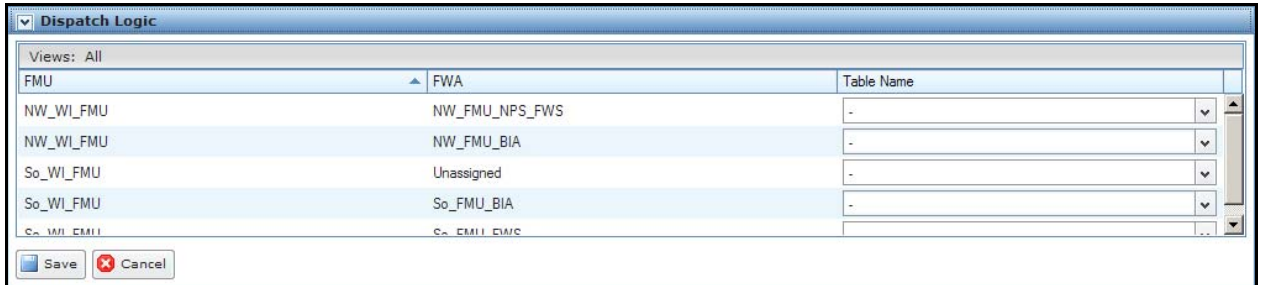
1. Select **Input Data > FWAs > Dispatch Logic**.

   Displays the Dispatch Logic table.

2. Click [Edit].

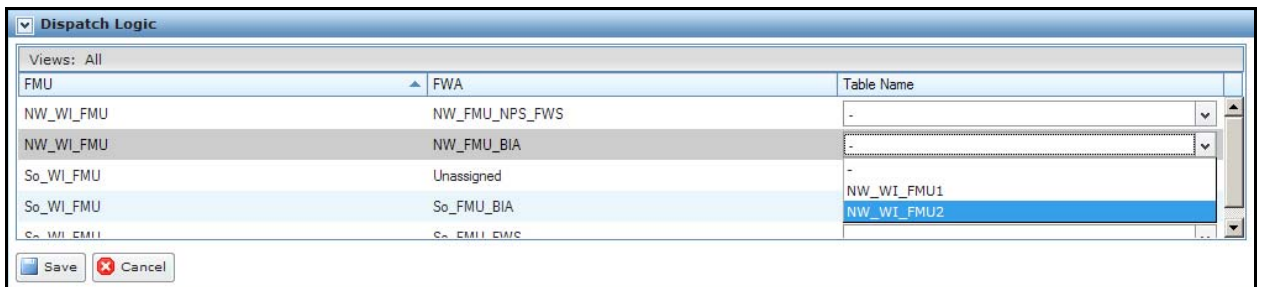   Displays the Dispatch Logic edit box.
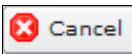
   NEED NEW SCREEN SHOT

   FPA grays out all other tables or navigational tools until the user adds or modifies Dispatch Logic information.

3. Select the appropriate dispatch logic table Name from the drop-down list for each FWA.

   NEEDS NEW SCREEN SHOT

   - Click [Save] to save the FWA dispatch logic table name association and update the database, or:

   - Click [Cancel] to cancel changes and return to the Dispatch Logic Table. No database updates occur.