DISPLACEMENT TIME ESTIMATES

Displacement Time Estimate Table

Flood Depth (feet)	Modified DDF (%)	Default (days)	User-Entered (days)	Displacement Costs	Rental Income Losses
-2	0	0		$0	$0
-1	0	0		$0	$0
0	5	0		$0	$0
1	9	0		$0	$0
2	13	54		$3,600	$900
3	18	94		$6,267	$1,567
4	20	110		$7,333	$1,833
5	22	126		$8,400	$2,100

There are six columns in the **Displacement Time Due to Building Flood Damage Table**. The first column shows the range of flood depths considered, from -2 to 18 feet. The second column carries forward the **Modified DDF (%)** from the **Building Depth-Damage Table** for guidance. The third column, **Default** (days), shows the estimated number of days of displacement by flood depth. The fourth column, **User-Entered** (days), is for the user to override the default estimates by entering building-specific estimates. The fifth column calculates the **Displacement Costs** by flood depth from the **Default** or, if entered, the **User-Entered Displacement Time Estimates** (days) and the **Total Displacement Costs** ($/day). The sixth column calculates the **Rental Income Losses** by flood depth from the **Default** or **User-Entered Displacement Time Estimates** and the **Total Monthly Rent From All Tenants**.

Default Displacement Time Estimates

ORANGE Blocks (Default). The **Default Displacement Time Estimates** (days) are derived from the **Modified DDF (%)** shown in the **Building Depth-Damage Table**. The **Default** estimates assume that no displacement (i.e., renting of temporary space) occurs if the building sustains less than 10% damage. However, if the estimated building damage is greater than 10%, then the **Default** estimates of **Displacement Time** are scaled between 30 and 365 days. The 30 day minimum assumes that occupants won't relocate to temporary space if the damage is repairable within 30 days. The 365 day maximum assumes that all repairs will be completed and occupants will be back in the original space within one year.

User-Entered Displacement Time Estimates

BLUE Blocks (Override Default). If the **Default Displacement Time Estimates** do not accurately reflect the displacement times estimated for the occupants of the specific building under evaluation, users may enter more appropriate estimates based on engineering judgement, actual days of displacement observed, and common sense. Whenever

a user enters a **Displacement Time Estimate**, the program uses these values rather than the default values, although the default values are displayed for comparison to the user-entered values.

If data on actual **Displacement Time** at one observed flood depth are available, then this information may be used to calibrate the user-entered **Displacement Time Estimate**. In this case, the **Displacement Time** at the observed flood depth can be set to agree with the observed displacement time; estimated displacement times at other flood depths can be smoothly adjusted to be consistent with the observed **Displacement Time** data point. However, it is important to note that the **Displacement Time** in a single flood may or may not be representative of future expected times, depending on whether or not unusual circumstances affected the observed time.

Overriding the **Default Displacement Time Estimates** is perfectly acceptable, indeed it is required to get a valid benefit-cost analysis whenever the default estimates do not accurately reflect the building under evaluation. For example, if local conditions suggest that unusually long or short displacement times are likely, this should be reflected in the **User-Entered Displacement Time Estimates**.

Displacement Costs ($)

YELLOW Blocks (Results). The **Default Displacement Time Estimates,** or, if entered, the **User-Entered Displacement Time Estimates** are converted into **Displacement Costs** based on the **Total Cost of Displacement** per day (from the **LEVEL ONE Data** page) and the estimated days of displacement for each flood depth.

Rental Income Losses

YELLOW Blocks (Results). The **Default Displacement Time Estimates,** or, if entered, the **User-Entered Displacement Time Estimates** are converted into **Rental Income Losses** based on the **Total Monthly Rent from All Tenants** ($/month, from the **LEVEL ONE Data** page) and the estimated days of displacement for each flood depth.

COMMENTS: DISPLACEMENT TIME ESTIMATES

Comments

PINK Block (Information Only). This comment box should be used to record specific information about the **Displacement Time Estimates** and how they are governed by the building's vulnerability to flood damage and any other information, assumptions or local conditions which affect the user-entered **Displacement Time Estimates**.

LEVEL TWO DATA: FUNCTIONAL DOWNTIME

Functional Downtime is the number of days a public/nonprofit agency cannot provide services due to disaster-caused damage. For example, an agency may have to relocate out of its building for 60 days, but may resume service provision from temporary quarters after only 7 days. Thus, in this case, the functional downtime due to disaster damage is 7 days. **Functional Downtime** is also used to estimate business income losses (if applicable) due to flood damage.

The following three sections, **Reference Information from Level One Data**, **Functional Downtime Estimates**, and **Comments: Functional Downtime Estimates**, all pertain to the **Functional Downtime Estimates**, the days of lost function estimated to occur to at each flood depth.

The **Functional Downtime** section of the **LEVEL TWO (Detailed)** benefit-cost analysis is reached via the **NEXT SCREEN** button at the bottom of the **Displacement Time** screen or the menu tree:

Level Two Data | Functional Downtime

REFERENCE INFORMATION FROM LEVEL ONE DATA

Carry Over Information

Cost of Providing Services from this Building ($/day)	$534
Post-Disaster Continuity Premium ($/day)	$500
Total Value of Lost Services ($/day)	$1,034
Estimated Net Income of Commercial Businesses ($/month)	$1,500

PURPLE Blocks (Carry Over). Information from the **LEVEL ONE Data** page is displayed to identify the building under consideration and to provide reference information and guidance for the **LEVEL TWO (Detailed)** evaluation.

FUNCTIONAL DOWNTIME ESTIMATES

Functional Downtime Table

Flood Depth (feet)	Building DDF (%)	Default Downtime (days)	User-Entered Downtime (days)	Value of Lost Services	Lost Business Income
-2	0	0		$0	$0
-1	0	0		$0	$0
0	5	5		$5,171	$250
1	9	9		$9,308	$450
2	13	13		$13,445	$650
3	18	18		$18,616	$900
4	20	20		$20,685	$1,000
5	22	22		$22,753	$1,100

There are six columns in the **Functional Downtime Estimates** table. The first column shows the range of flood depths considered, from -2 to 18 feet. The second column carries forward the **Building DDF** from the **Building Depth-Damage** table for guidance. The third column, **Default Downtime**, shows the estimated number of days of loss of function by flood depth. The fourth column, **User-Entered Downtime**, is for the user to override the default estimates by entering building-specific estimates. The fifth column calculates the **Value of Lost Services** by flood depth from the **Default** or, if entered, the **User-Entered Functional Downtime Estimates** (days) and the **Total Value of Lost Services** ($/day). The sixth column calculates the **Lost Business Income** by flood depth from the **Default** or **User-Entered Functional Downtime Estimates** and the **Estimated Net Income of Commercial Businesses** ($/month).

Default Functional Downtime Estimates

ORANGE Blocks (Default). The **Default Downtime Estimates** (days) are derived from the **Building DDF (%)** carried over from the **Building Depth-Damage Function Table**. The **Default Downtime Estimates** assume that if the building sustains less than 10% damage, then one day of **Functional Downtime** occurs for each 1% of damage. However, if the estimated building damage is greater than 10%, then the **Default Downtime Estimates** are scaled between 10 and 30 days. It is assumed that public/nonprofit agencies and businesses will resume function in temporary quarters, if necessary, within 30 days; thus the **Default Functional Downtime Estimates** are capped at 30 days.

User-Entered Functional Downtime Estimates

BLUE Blocks (Override Default). If the **Default Functional Downtime Estimates** do not accurately reflect the **Functional Downtime** estimated for the specific building under evaluation, users may enter more appropriate estimates based on engineering judgement, actual days of downtime experienced, and common sense. Whenever a user enters a **Functional Downtime Estimate**, the