LEVEL TWO DATA: CONTENTS DEPTH-DAMAGE FUNCTION

The **Contents Depth-Damage Function (DDF)** indicates the building contents' vulnerability to flood damage by showing the expected levels of damage, both as a percentage of contents value and as dollars of damage for each flood depth.

The following three sections, **Reference Information from Level One Data**, **Contents Depth-Damage Function**, and **Comments: Contents DDF**, all pertain to the **Contents Depth-Damage Function**, the damage estimated to occur to the building's contents at each flood depth.

The **Contents Depth-Damage Function** section of the **LEVEL TWO (Detailed)** benefit-cost analysis is reached via the **NEXT SCREEN** button at the bottom of the **Building Depth-Damage Function** screen or the menu tree:

Level Two Data | Contents Depth-Damage Function

REFERENCE INFORMATION FROM LEVEL ONE DATA

Carry Over Information

Contents Description	office furniture, computers & files	
Total Value of Contents		$22,500
Value of Contents ($/sf)		$22.50

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.

CONTENTS DEPTH-DAMAGE FUNCTION (DDF)

Contents Depth-Damage Table

Flood Depth (feet)	Building DDF(%)	ESTIMATED CONTENTS DAMAGE		
		Default DDF (%)	User-Entered DDF (%)	DDF ($)
-2	0	0		$0
-1	0	0		$0
0	5	8		$1,688
1	9	14		$3,038
2	13	20		$4,388
3	18	27		$6,075
4	20	30		$6,750
5	22	33		$7,425

There are five columns in the **Contents Depth-Damage Table**. The first column shows the range of flood depths considered, from -2 to 18 feet. The second carries over the **Default** or **User-Entered Building DDF** (if entered) from the **Building Depth-Damage Function** for reference. The next two columns contain estimated contents damage in percentages of the contents' value: **Default DDF (%)** and **User-Entered DDF (%)**. The fifth column, **DDF ($)**, converts the **Default DDF (%)** or, if entered, the **User-Entered DDF (%)** values into dollars.

Default Contents DDF

ORANGE Blocks (Default). The **Default Contents DDF** values shown are 150% of the default building damage percentages for the building type selected. The 150% multiplier assumes that typical contents are more vulnerable to flood damage than are typical buildings.

The **Default Contents DDF** depends **ONLY** on the building type selected, **NOT** on the contents in any particular building. The vulnerability of contents to flood damage may vary markedly depending on the type of contents. For example, rare books are much more vulnerable than are used bricks. Therefore, users should enter building-specific estimates of the contents **Default DDF** whenever possible.

User-Entered Contents DDF

BLUE Blocks (Override Default). If the **Default DDF** does not accurately reflect the **Contents DDF** of the specific building under evaluation, the user may enter more appropriate estimates based on engineering judgement, actual contents, and common sense. Also, if the **OTHER** building type is selected, then no default values are provided and the user must enter building-specific **Contents DDF** estimates. Whenever a user enters a depth-damage 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 contents damage data at one observed flood depth are available, then this value may be used to calibrate the user-entered **Contents DDF**. In this case, the percent damage at the observed flood depth can be set to agree with the observed damages, and damages at other flood depths can be smoothly adjusted to be consistent with the observed damage data point. However, it is important to note that the damages in a single flood may or may not be representative of future expected damages, depending on whether or not unusual circumstances affected the observed damages.

Overriding the default depth-damage 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 a building's contents are unusually resistant or unusually vulnerable to flood damage, this information should be reflected in the user-entered **Contents Depth-Damage Function**.

Also, the default depth-damage estimates consider predominantly water depth. If high velocity flows, ice or debris-induced damage, erosion and soil/foundation failure, or unusually long-duration flooding are likely, then the default depth-damage estimates **MUST** be adjusted accordingly.

A user-entered Contents Depth-Damage Function MUST be entered whenever high velocity flows, ice or debris-induced damage, erosion and soil/foundation failure, or unusually long-duration flooding are likely.

Contents DDF ($)

YELLOW Blocks (Results). The contents depth-damage percentage estimates are converted to dollars in the final column of the **Contents Depth-Damage Table**.

COMMENTS: CONTENTS DDF

Comments: Contents DDF

PINK Block (Information Only) This comment box may be used to record specific information about the building contents which affects their vulnerability to flood damage or any other information or assumptions which affect the user-entered contents depth-damage estimates (such as long duration flooding).

Additionally, if **OTHER** was selected as the building type, a description of the building contents and their estimated depth-damage function should be entered here. As with the **Building DDF**, if **OTHER** is selected, no default values for the **Contents DDF** are provided.

LEVEL TWO DATA: DISPLACEMENT TIME

The **Displacement Time Estimates** indicate the occupants' vulnerability to flood damage by showing the expected levels of displacement time, displacement costs, and rental income losses for each flood depth. **Displacement Time** is the number of days occupants must vacate the building because of flood damage. **Displacement Time** may be shorter than the repair time, because some flood damage repairs can be made with occupants in the building.

The following three sections, **Reference Information from Level One Data**, **Displacement Time Estimates,** and **Comments: Displacement Time Estimates**, all pertain to the **Displacement Time**, the number of days of displacement estimated to occur to a building's occupants at each flood depth.

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

Level Two Data | Displacement Time

REFERENCE INFORMATION FROM LEVEL ONE DATA

Carry Over Information

Rental Cost of Temporary Building Space ($/sf/month)	$1.50
Rental Cost of Temporary Building Space ($/month)	$1,500
Other Costs of Displacement ($/month)	$500
Total Displacement Costs ($/month)	$2,000
Total Monthly Rent from All Tenants ($/month)	$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.