HAZUS-MH MR3 Patch 2

Release Notes

July 28, 2008

Note: Operation of Patch 2 requires installation of Service Pack 5. ArcGIS 9.2 should already have been installed as part of the HAZUS-MH MR3 installation.

In the Flood Model, Patch 2:

1. Permits MR2 study regions to be imported and run in MR3.

2. Automatically repairs a study region's census tracts and blocks if self-intersecting polygons exist.

3. Permits the updating of point data in the inventory.

4. Permits full use of the ArcGIS Editor toolbar.

5. Provides the ability to accept DEMs of varying projections.

6. Updates the Flood Information Tool's (FIT) method of comparing spatial reference projections.

7. Permits modification of the stream network resolution for a scenario.

8. Eliminates involuntary exiting from the Flood Model and other errors when selecting from the Shore Limits dialogue boxes.

9. Minimizes the number of problem reaches in hydrology by adding an alternative method for the 200-year and 500-year return periods.

10. Provides the ability to run a significant number of river reaches with minimal stopping in hydraulics.

11. Corrects the flood depths derived from inputting a single discharge value.

12. Displays the merged depth grid to the correct output cell size in FIT and User Depth Grid scenarios.

13. Creates a FailedReaches layer if failed reaches exist in the scenario after the hydraulics process has run completely. Failed reaches are separate from the hydrological problem reaches that are shown in the ProblemReaches layer.

14. The suite-of-return periods hazard computations are identical to each and every single-return period counterpart run separately.

15. The results using Default damage functions are no longer the same as those using Selected damage functions.

16. The What-If results differ as they should from those in a regular scenario.

17. Eliminates double counting of damage and loss in combined Riverine and Coastal scenarios.

18. Permits analysis for User-Defined Facilities for the Coastal hazard.

19. Corrects the summary reports to eliminate missing values.

20. Fixes sixty-three bugs in all (See *Detailed Release Notes for the Flood Model*).

In the Hurricane Model, Patch 2:

1. Corrects the processing of HURREVAC Forecast/Advisory data for small diameter storms (as measured by radius to maximum winds).

2. Corrects HURREVAC Forecast/Advisory data to ensure that wind speeds over land are less than wind speeds over water.

3. Updates the HURREVAC Forecast/Advisory data to provide a complete track for Hurricane Ivan (2004).

4. Corrects the historic scenario interface window to read "1900-2005" instead of "1900-2001."

5. Corrects the list of states shown in the user interface as having been impacted by events in the historic storm database.

6. Modifies the essential facilities inventory display to permit selection of a specific building type and a wind building characteristics mapping scheme from drop-down menus.

7. Eliminates the ArcToolBox menu that appeared upon opening the Hurricane Model.

In the Earthquake Model, Patch 2:

1. Updates the NEIC (National Earthquake Information Center) database with 2007 data.

2. Corrects the browser for user-defined damage functions so that LS (Special Low-Code) values are not displayed in place of the LC (Low-Code) values.

3. Corrects an error produced when damage lies outside the area defined by the ground motion data.

4. Eliminates the ArcToolBox menu that appeared upon opening the Earthquake Model.

Note: The Earthquake Model might be overestimating liquefaction related losses, especially for moderate-sized (Mw_e 6.0 and smaller) earthquake scenarios. A fix is planned for Patch 3, which is expected to be released in Fall 2008. Please contact Tech Support with any questions.

In the HAZUS Shell, Patch 2:

1. Incorporates Patch 1 as part of Patch 2. If Patch 1 is not installed, a script will run to install all of Patch 1 and Patch 2 fixes. If Patch 1 has already been installed, only the Patch 2 fixes will be installed and Patch 1 will not be overwritten.

2. Allows Patch 2 to be installed in single model HAZUS installations.

3. Facilitates the importing of MR2 study regions in MR3 without SQL Server 2005 issues.

HAZUS-MH MR3 Patch 2

Detailed Release Notes for the Flood Model

July 28, 2008

Design
- Redesigned Hydraulics process – includes a CoreOfHydraulics.exe that runs outside of HAZUS and optimizes OS memory usage.

DTS Packages
- GBS census blocks columns such as Building Loss, ContentLoss, and SqrftDmg are assigned default values of zero; without Patch 2, those rows are not shown.
- HAZUS-MH MR2 study regions can be imported into HAZUS-MH MR3.

GUI
- The column name "Stories" has been replaced with "ScourPotential" in the Transportation Damage Function browser.
- User-defined damage functions and user-defined depth grid parameters can be saved.
- Error messages that appear when opening the First Floor Elevations dialog have been eliminated.
- The involuntary exiting and other errors that occurred when selecting from the Shore Limits dialog boxes have been eliminated.
- The memory label on the Hydraulics dialog has been removed.
- The processing time for merging of floodplain boundary polygons for Enhanced Quick Look (EQL) has been optimized.
- The "Save As" function copies over the scenario parameters of Scenario1 to Scenario2.
- A rotating Earth "processing dialog" has bee added in the analyses of Essential Facilities, Transportation, and Utilities.

Inventory
- Users can edit point data (pGDB) to update the Inventory.
- A new GUI has been added for First Floor Elevations. Users can create a user-defined master FFE table (56 rows). FFEs can vary by block type, pre-FIRM/post-FIRM, foundation type, and A/V Zone.

Flood Information Tool
- The FIT's method of comparing spatial reference projections has been updated.
- The FIT working directory cannot have a space in path name.
- For the FIT Cross Sections error caused by the ObjectID field, which is not an ESRI data type, a check has been added to ensure the required feature class is being created.

Hazard - DEM

- The User Data dialog will accept DEMs of varying projections.

Hazard – Stream Network
- The Hydraulics cache is deleted from the disk before a stream network is rerun.

Hazard – Hydrology
- Rerunning Hydrology no longer triggers a "Gage Adjustment" error.
- In Hydrology, a lock (CaseOutput.ldb) sometimes prevents the user from proceeding to the Hydraulics process. A message prompt has been added before the Hydraulics process starts that instructs users to delete CaseOutput.ldb and to restart HAZUS to run Hydraulics.
- The Hydrology code has been updated to minimize stoppages and problem reaches.

Hazard – Hydraulics
- New code has been added to take the Hydraulics code into a standalone .EXE. This prevents the loss of the machine's virtual memory and prevents hangings in Hydraulics.
- The Hydraulics (suite) computes the depth grid for each return period individually instead of using interpolation.
- The FIT and User Depth Grid scenario displays the merged depth grid to the correct output cell size.
- In Hydraulics, HAZUS will move to the next reach in the queue if a reach fails in processing. At the end of the Hydraulics process, HAZUS will create and add a layer called FailedReaches to the map.
- When running Hydraulics by a single discharge, each reach is associated with the correct return period/discharge and the corresponding grid or shapefile is merged correctly.
- What-If analysis results are no longer identical to standard scenario results.

Analysis
- The analysis for User-Defined Facilities now works for coastal hazards.
- HAZUS no longer uses default damage functions when a user selects specific functions.
- The damage functions for Essential Facilities and User-Defined Facilities have been changed so that damage peaks at 4 feet (100%) and varies between -4 and 4.
- The Combinatorial Operator Overflow error in Area Weighted has been fixed.
- The Transportation analysis produces correct results for riverine and coastal scenarios.
- HAZUS automatically repairs a study region's state data for census tracts and blocks that have self-intersecting polygons.
- The GBS analysis no longer double counts in combined riverine and coastal scenarios.

Results
- The "Verify Database" message no longer appears when trying to view a summary report.

- A suite of return periods run for riverine and coastal scenarios displays correct Transportation and Utility results.
- Summary reports for Mix0 scenarios now populate results.