**BenMAP-CE Release Notes**

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***Release Version* BenMAP-CE 1.1.7**

***Release Date* 2015.9.30**

**Main Improvements**

1. Added parameterized GBD Integrated Exposure Response (IER) functions. These are spline functions for PM2.5 1 to 1,000 ug/m3 range with custom beta distributions. Includes 20 segments for CEV function, and 11 segments each for COPD, IHD, and LC functions.
2. Added Country Shapefiles (from GBD Rollback Tool) and Python program to perform percentage rollback to the BenMAP-CE installer (files under 'My BenMAP-CE Files\Country Shapefiles').
3. Performed thorough review of data import forms and resolved several issues within “Modify Datasets” dialog, including: 1) resolve issues with loading and display of metadata, 2) correct minor issue with automatic load of data after validation (without user clicking “OK” to proceed), and 3) ensure that when the user clicks “Delete” the selected record is highlighted and the user receives a confirmation message prior to delete.
4. Added validation check for incidence datasets (warning will be issued if value outside of range 0 to 1).
5. Changed About page to display internal build number (4th digit in the BenMAP-CE version number (used by software developer to track internal test versions).

**Known Issues (for future updates)**

1. There are known issues with international settings (e.g., date and number formatting) which may interfere with data imports. Please refer to the “BenMAP-CE Regional Formats” document for information about data conventions and computer settings.
2. There are known issues with the DotSpatial library which may cause a null reference exception or cause the program to crash when attempting to edit the legend text or color (for an individual category) on the GIS map. These issues have been reported to the DotSpatial CodePlex.
3. When BenMAP-CE is maximized the scroll bar for the legend disappears and some of the GIS layers become inaccessible.
4. Once a result has been drawn to the GIS Map the user can no longer re-organize the GIS layers.
5. There is an issue on the GIS map displayed when adding monitor data for baseline or control layers. Using the identify tool on the map causes an out of memory exception. This identify tool is currently disabled to avoid the error.
6. There is no mechanism to allow the user to modify the default administrative layer in the BenMAP-CE GIS window.
7. BenMAP-CE attempts to re-project shapefiles to NAD83 that are already in an acceptable projection (e.g., WGS).
8. When importing shapefiles, users should be able to select the columns they want to designate as COL and ROW index, even if the columns of the attribute table are not labeled as such.
9. The Health Impact Function Editor should display the Mean and Standard Deviation from custom distributions in the Beta Parameter 1 and Beta Parameter 2 fields.
10. In the monitor dataset import, the import code does not allow the first value to be missing. Users have had to alter the dataset (e.g., substitute a "0" for the "." if it is the first value) to get it to import. Also, modeled data often includes "-9" as missing data code. BenMAP has no way of interpreting alternate missing value codes.
11. Under “Manage Population Datasets”, there is currently no option for an “Output Sample File”.
12. An audit trail should summarize the details of the BenMAP-CE analysis at the time it was run. It should not include details from the current database.

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***Release Version* BenMAP-CE 1.1.6**

***Release Date* 2015.8.31**

**Main Improvements**

1. Resolved issue with Health Impact Function Editor not importing correctly (issue identified while testing import of custom spline functions).
2. Resolved issue with BenMAP-CE throwing a database exception error when attempting to load a population dataset. The database was incorrectly trying to open a connection that was already open.
3. “Unlocked” the EPA-provided (preloaded) datasets. The locking mechanism was intended to protect preloaded datasets from being modified by the user without also modifying the associated metadata. Until development work to improve management of datasets (including a cloning feature) is complete, the preloaded datasets will remain unlocked.
4. Added metadata descriptions for preloaded datasets.

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***Release Version* BenMAP-CE 1.1.5**

***Release Date* 2015.8.10**

**Main Improvements**

1. Fixed an issue that prevented images for Beta Distributions to not appear within the Health Impact Function Editor (pop-up form on click of distribution type).

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***Release Version* BenMAP-CE 1.1.4**

***Release Date* 2015.8.7**

**Main Improvements**

1. Fixed an issue with having to click “Run” twice to run health impact functions.
2. Fixed an issue that prevented the aggregation of Detroit data.

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***Release Version* BenMAP-CE 1.1.3**

***Release Date* 2015.7.30**

**Main Improvements**

1. Added Mortality Incidence data for the Detroit setup.
2. Fixed an issue that prevented Grid Definitions from being created.

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***Release Version* BenMAP-CE 1.1.2**

***Release Date* 2015.7.24**

**Main Improvements**

1. Added a setup for Detroit using the BenMAP-CE Quick Start Guide data files (dated November 2014).

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***Release Version* BenMAP-CE 1.1.1**

***Release Date* 2015.3.31**

**Main Improvements (minor bug fixes to public release version 1.1.0)**

1. Fixed bug which prohibited Regular Grid creation from saving (under Modify Datasets/Grid Definitions).

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***Release Version* BenMAP-CE 1.1.0**

***Release Date* 2015.2.16**

**Main Improvements**

1. Software published for public release. 64-bit and 32-bit versions available.
2. Added index to population entries table to speed up processing which use age range and race information.
3. Corrected issues related to database import tool (using .bdbx files).
4. Created default folder location for database export tool. File save location defaults to ‘My BenMAP-CE Files\Exports’.

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***Release Version* BenMAP-CE 1.0.18.11**

***Release Date* 2015.1.16**

**Main Improvements**

1. To address installation issues related to UAC settings and VirtualStore (encountered on computers running Windows versions newer than XP, such as Windows Vista and Windows 7), changed installation location of software and added manifest file which requires administrative privileges to install.
2. Replaced Microsoft Interop libraries with OpenXML SDK 2.5 libraries that allow for greater support of open source office solutions and allow user to export .xlsx file while using the GBD Rollback tool.
3. BenMAP-CE now allows users to add new endpoint groups and endpoints when importing Health Impact Functions (using .csv files).
4. Modified GBD tool to clear check boxes on the ‘select by country’ tab if the user elects to run consecutive analyses; previously the selection list failed to clear.

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***Release Version* BenMAP-CE 1.0.18-10**

***Release Date* 2014.12.30**

**Main Improvements**

1. Added the ability for the user to export a csv file from the GBD RollBack Tool.
2. Resolved an issue that prevented some of the buttons from being accessible on smaller screen resolutions. Now all large forms are resizable (i.e., GBD Rollback tool).

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***Release Version* BenMAP-CE 1.0.18-9(noOfficeInstaller)**

***Release Date* 2014.12.30**

**Main Improvements**

1. Removed Microsoft Interop libraries that caused program instability on machines that previously had differing versions of Microsoft Office Installed.

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***Release Version* BenMAP-CE 1.0.18-8**

***Release Date* 2014.11.14**

**Known Issues (for future updates)**

1. When opening a saved .projx file that has been completed through step 3 (Pooling and Aggregation) the green “stop lights” turn to red for the Health Impact Functions, Pooling, and Valuation method lights.
2. There is an issue where attempting to edit the legend on the GIS map causes a null reference exception. This has been reported as a DotSpatial bug.
3. There is an issue on the GIS map displayed when adding monitor data for baseline or control layers. Using the identify tool on the map causes an out of memory exception. This tool has currently been disabled.

**Main Improvements**

1. Re-enabled automated error reporting for unhandled exceptions that cause the system to crash.
2. The user is now able to deselect their current selection by right clicking on the layer that the selected item is in and choosing the “unselect all” button under “selection”.
3. Included EPAStandardVariable Variable dataset into the default database.
4. Users are now allowed to import quarterly and monthly monitor datasets.
5. On Uninstall BenMAP-CE removes all application data directories from the users’ machine.
6. Fixed an issue that prevented the user from manually entering Health Impact and Valuation functions.
7. Fixed a problem that caused “Source of Air Quality Data” to disappear from workflow.
8. Fixed a multiple issues that caused BenMAP-CE to hang upon close.
9. Fixed a problem that caused Health Impact Functions input files to fail validation.
10. Replaced “new” China Health Impact Functions in the China setup. The short term functions had the multiplier "A" missing in the Baseline Function formulas.
11. Removed “Year” column from Incidence data set example file (extra column caused failure of validation checks).
12. Fixed an issue with Validation causing input files with “$” and “%” characters to fail.
13. Fixed an issue that caused duplicate entries upon loading a valuation dataset.
14. Fixed an issue that prevented the user from importing a Variable dataset with more than 1 column.
15. Fixed multiple issues regarding Output Example Files.
16. Fixed an issue that prevented the user from selecting .aqgx files in the browse dialog for Baseline and Control under Source of Air Quality Data.
17. Fixed multiple issues related to the GDB rollback tool, specifically issues that caused scenario execution errors, unhandled exceptions, and incorrect results.
18. Fixed issue with missing health impact function configuration in reloading saved project (.projx) files. The health impact function configuration (.cfgrx) data was not being saved correctly within the project file.

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***Release Version* BenMAP-CE 1.0.17**

***Release Date* 2014.09.010**

**Main Improvements**

1. Fixed a problem that prevented the user from redisplaying the GIS map table of contents after being hidden.
2. Fixed an issue that prevented the user from adding a new Health Impact Function manually to the Setup.
3. Fixed a problem that prevented the drawing of the GIS map for China.
4. Fixed a data import issue for China that caused a longitude error.
5. Fixed an issue that caused duplicate Pooled Valuation Layer.

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***Release Version* BenMAP-CE 1.0.16**

***Release Date* 2014.08.19**

**Main Improvements**

1. Fixed issues with GIS display of air quality surfaces (Baseline/Control/Delta).
2. Added Deaths per 100,000 people, percentage of deaths attributable to pm2.5 levels, and 97.5 confidence intervals to the GDB Rollback export file.
3. Improved precision of GDB Rollback tool.

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***Release Version* BenMAP-CE 1.0.13-1.0.15**

***Release Date* 2014.08.06**

**Main Improvements**

1. Fixed a problem that caused data validation to prevent the monitor rollback feature.
2. Resolved a database exception issue relating to the GDB Rollback tool.
3. When importing a shapefile to create a new grid, BenMAP now attempts to re-project the shapefile to GCS NAD 83 if the projection is not already this by default.

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***Release Version* BenMAP-CE 1.0.12**

***Release Date* 2014.08.01**

**Main Improvements**

1. Implemented new Global Burden of Disease Rollback tool, available under the Tools menu.
2. Fixed a problem where the GIS menu bar status would not be maintained when a second pollutant was added.

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***Release Version* BenMAP-CE 1.0.11**

***Release Date* 2014.07.22**

**Main Improvements**

1. Fixed bug associated with metadata save action.
2. Fixed a problem that prevented inflation datasets from importing correctly.

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***Release Version* BenMAP-CE 1.0.10**

***Release Date* 2014.07.07**

**Main Improvements**

1. Automated error reporting feature was disabled due to a number of problems associated with error handling logic (to be addressed in future version). Manual “provide feedback” feature still enabled.

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***Release Version* BenMAP-CE 1.0.9**

***Release Date* 2014.07.03**

**Main Improvements**

1. Fixed numerous data import issues.
2. Implemented numerous improvements to GIS map and tools.
3. Implemented new Error Reporting feature. Manual reporting of software bugs and requested improvements is available under the Help menu (“Provide Feedback”). Automated reporting feature captures error log and audit trail when the program crashes (user is prompted to submit data upon reopening BenMAP-CE).

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***Release Version* BenMAP-CE 1.0.8**

***Release Date* 2014.04.28**

**Main Improvements**

1. Implemented new Data Validation features for data imports and added Metadata for user-supplied data.
2. Updated GIS DotSpatial from version 0.11.9.6 to version 1.6.
3. Fixed a problem with regular grids created by BenMAP-CE. Now these grids will begin with column and row values of 1 instead of 0.
4. When estimating health impact functions using daily modeled values, days with missing values will not be included in the results. Previously, these missing days were assigned the mean value, which led to incorrect results.
5. Fixed a problem that caused results calculated using county-level data to differ between BenMAP 4 and BenMAP-CE.

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***Release Version* BenMAP-CE 1.0.7**

***Release Date* 2014.04.01**

**Main Improvements**

1. Fixed a major issue in BenMAP-CE that caused percentage crosswalks between grid definitions to be incorrect for user-added shapefiles.

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***Release Version* BenMAP-CE 1.0.6**

***Release Date* 2014.03.06**

**Main Improvements**

1. Fixed a problem that prevented users from estimating health impacts in some cases.
2. Updated the Firebird database client and helper class.

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***Release Version* BenMAP-CE 1.0.5**

***Release Date* 2014.02.28**

**Main Improvements**

1. Column and row variables saved as doubles in shapefile attribute tables will now be automatically converted to integers when imported into BenMAP-CE.
2. Audit trails can now be generated for files created in a BenMAP-CE setup that does not exist in a user’s current list of setups.

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***Release Version* BenMAP-CE 1.0.4**

***Release Date* 2013.12.06**

**Main Improvements**

1. Fixed a problem with incorrect delta maps being saved to .apvrx files generated using command line mode.

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***Release Version* BenMAP-CE 1.0.3**

***Release Date* 2013.12.05**

**Main Improvements**

1. Fixed problem with command line mode that required user to confirm pooling weights for each run.
2. Fixed problem with specifying fields to be saved when generating reports in command line mode.

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***Release Version* BenMAP-CE 1.0.2**

***Release Date* 2013.12.02**

**Initial Public Milestone Release**

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