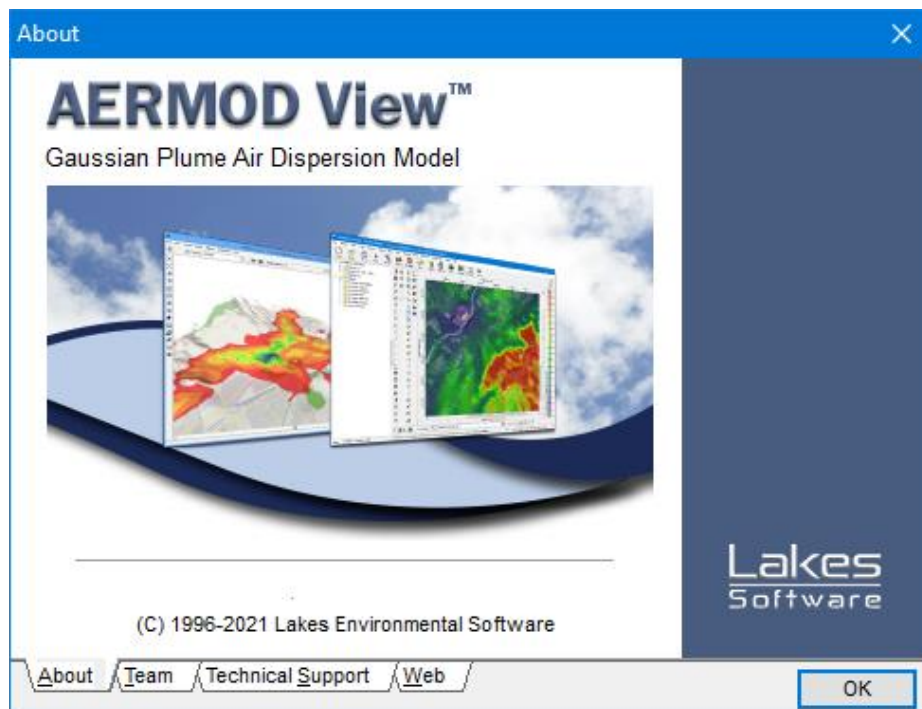


AERMOD View™

Gaussian Plume Air Dispersion Model - AERMOD

Release Notes

Versions 10.2, 10.0.1 & 10.0



Lakes Environmental Software
Tel: (519) 746-5995 – Fax: (519) 746-0793
E-mail: support@webLakes.com
Web Site: www.webLakes.com

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Software

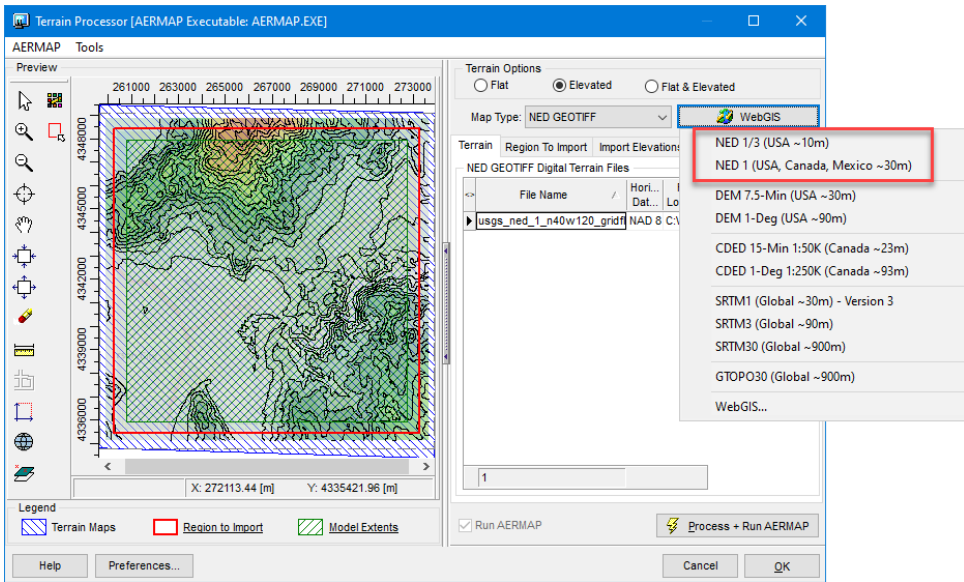
© 1996-2021 Lakes Environmental Software

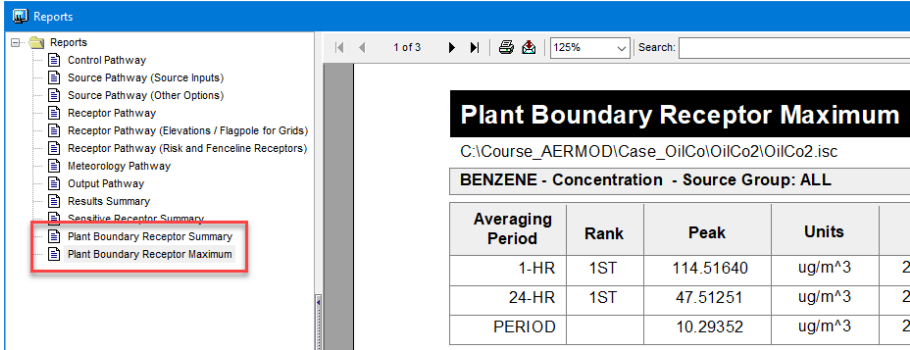
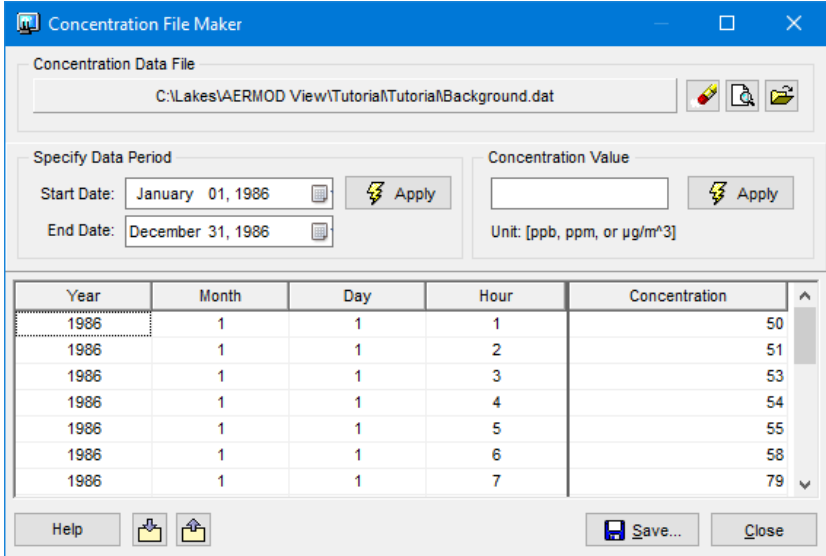
AERMOD View™ Version 10.2

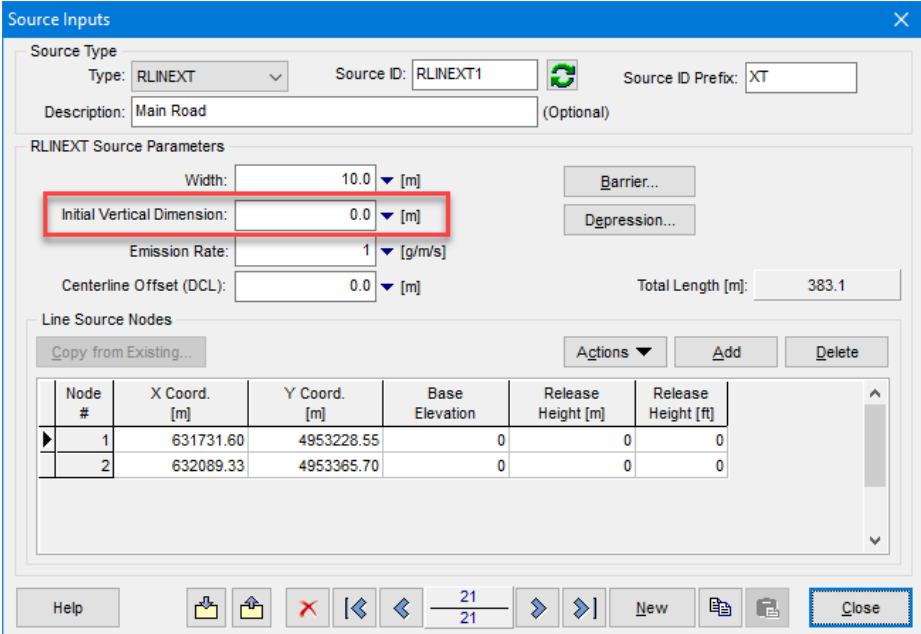
Release Notes

December 1, 2021

New Features

Topic	Feature Description
<p>WebGIS</p>	<p>Updated NED Data Downloads</p> <p>USGS recently updated the <u>1/3 arc-second</u> and <u>1 arc-second</u> data repositories for the 3D Elevation Program (3DEP, formerly National Elevation Dataset [NED]). Data are now available for download in Cloud-Optimized GeoTIFF format only instead of the previous ArcGrid and GridFloat formats.</p> <p>To accommodate the change, WebGIS has been updated to download the most up-to-date version tile for each resolution. Data extents remain the same with 1/3 arc-second (10-m resolution) tiles covering the USA and 1 arc-second (30-m res.) tiles spanning North America.</p>  <p>Note: A current maintenance agreement is required to access NED data downloads from WebGIS.</p>

Topic	Feature Description																																								
<p>Reports</p>	<p>New Plant Boundary Summary & Plant Boundary Maximum Reports</p> <p>New reports are available which print results for Plant Boundary receptors.</p> <ul style="list-style-type: none"> • Plant Boundary Summary prints all results for receptors along the boundary line. Users can filter results by receptor type (primary or intermediate), source group, and pollutant ID. • Plant Boundary Maximum prints only the highest value along the boundary line for each averaging period / source group combination.  <table border="1" data-bbox="899 846 1360 993"> <thead> <tr> <th>Averaging Period</th> <th>Rank</th> <th>Peak</th> <th>Units</th> <th></th> </tr> </thead> <tbody> <tr> <td>1-HR</td> <td>1ST</td> <td>114.51640</td> <td>ug/m³</td> <td>2</td> </tr> <tr> <td>24-HR</td> <td>1ST</td> <td>47.51251</td> <td>ug/m³</td> <td>2</td> </tr> <tr> <td>PERIOD</td> <td></td> <td>10.29352</td> <td>ug/m³</td> <td>2</td> </tr> </tbody> </table>	Averaging Period	Rank	Peak	Units		1-HR	1ST	114.51640	ug/m ³	2	24-HR	1ST	47.51251	ug/m ³	2	PERIOD		10.29352	ug/m ³	2																				
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PERIOD		10.29352	ug/m ³	2																																					
<p>Tools</p>	<p>Concentration File Maker Updates</p> <p>The Concentration File Maker utility has been updated to improve usability and match existing controls from other Tools. This includes:</p> <ul style="list-style-type: none"> • Addition of a data file field for clarity on what file is being edited • Option to open existing concentration data files • Import & export capabilities for Excel, CSV, & ASCII text files  <table border="1" data-bbox="464 1602 1263 1818"> <thead> <tr> <th>Year</th> <th>Month</th> <th>Day</th> <th>Hour</th> <th>Concentration</th> </tr> </thead> <tbody> <tr> <td>1986</td> <td>1</td> <td>1</td> <td>1</td> <td>50</td> </tr> <tr> <td>1986</td> <td>1</td> <td>1</td> <td>2</td> <td>51</td> </tr> <tr> <td>1986</td> <td>1</td> <td>1</td> <td>3</td> <td>53</td> </tr> <tr> <td>1986</td> <td>1</td> <td>1</td> <td>4</td> <td>54</td> </tr> <tr> <td>1986</td> <td>1</td> <td>1</td> <td>5</td> <td>55</td> </tr> <tr> <td>1986</td> <td>1</td> <td>1</td> <td>6</td> <td>58</td> </tr> <tr> <td>1986</td> <td>1</td> <td>1</td> <td>7</td> <td>79</td> </tr> </tbody> </table>	Year	Month	Day	Hour	Concentration	1986	1	1	1	50	1986	1	1	2	51	1986	1	1	3	53	1986	1	1	4	54	1986	1	1	5	55	1986	1	1	6	58	1986	1	1	7	79
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Topic	Feature Description
<p>Sources</p>	<p>RLINEXT Parameters Update</p> <p>An update was made to the RLINEXT Source Inputs dialog to identify the Initial Vertical Dimension field as required for this source type. Previously, users who left that field blank as if it were an optional field were met with a fatal error during model execution.</p>  <p>The screenshot shows the 'Source Inputs' dialog box. The 'Source Type' is 'RLINEXT'. The 'Initial Vertical Dimension' field is highlighted with a red box and contains the value '0.0 [m]'. Other fields include 'Width: 10.0 [m]', 'Emission Rate: 1 [g/m/s]', and 'Centerline Offset (DCL): 0.0 [m]'. A table of 'Line Source Nodes' is also visible with columns for Node #, X Coord. [m], Y Coord. [m], Base Elevation, Release Height [m], and Release Height [ft].</p>
<p>Base Maps</p>	<p>Additional Character Support for DXF Files</p> <p>The DXF import library was expanded to include support for Unicode symbols that were previously not available.</p>
<p>Help</p>	<p>Menu Update</p> <p>Web links in the Help menu have been updated based on recent updates to the Lakes Software website (https://www.webLakes.com)</p>

Fixed Issues

Topic	Feature Description
Source Pathway	<p>Default In-Stack NO₂/NO_x Ratio</p> <p>The Default In-Stack NO₂/NO_x Ratio (CO NO2STACK) used with PVMRM, OLM, or TTRM was not automatically updated from a value of 0.50 without additional modifications to the Control Pathway's NO₂-to-NO_x options. This has been corrected so that the change is immediately reflected in the model input file.</p>
Source Pathway	<p>Hourly Emission File Maker Update</p> <p>The File Maker utility for the Hourly Emission File was updated to better support multi-year meteorological data files. Previously, an error was issued when the surface data file (*.SFC) contained file headers in between years.</p>
Source Pathway	<p>Import Background Concentrations</p> <p>When using an existing AERMOD input file as a template for starting a new project, any associated background concentrations were only recognized in the new project's input file if the user checked the Source Pathway dialog first. This has been corrected, and new projects will include all background concentrations.</p>
Multi-Chemical Run	<p>Processing Large Output</p> <p>An update was made to the Multi-Chemical Run utility to aid in processing very large POSTFILES (1+ GB).</p>

Known Issues

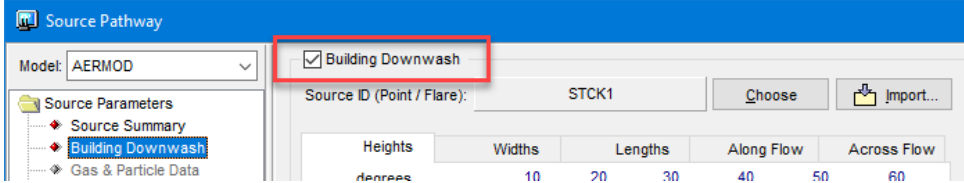

Topic	Issue Description
AERMOD 21112	<p>Background NO2 Doubled with PVMRM</p> <p>The US EPA has reported a bug in which Background Concentrations (input via the Source Pathway) are inadvertently doubled when modeling NO2 with the Plume Volume Molar Ratio Method (PVMRM).</p> <p>The advised workaround is to input background values which are 50% of the actual background concentrations.</p>
AERMOD 19191, 21112	<p>RLINEXT Results Sensitive to Receptor Order</p> <p>When modeling with the RLINEXT source in AERMOD 19191 or later, results are dependent upon receptor order for receptors that fall within the source dimensions.</p>
New Project Wizard	<p>No Spaces in Project Name with ISC</p> <p>The ISCST3 and ISC-PRIME models are included in AERMOD for backwards compatibility purposes. Due to limitations in their code, these models will issue a fatal error if the project name contains spaces or special characters.</p>

AERMOD View™ Version 10.0.1

Release Notes

July 9, 2021

Updates

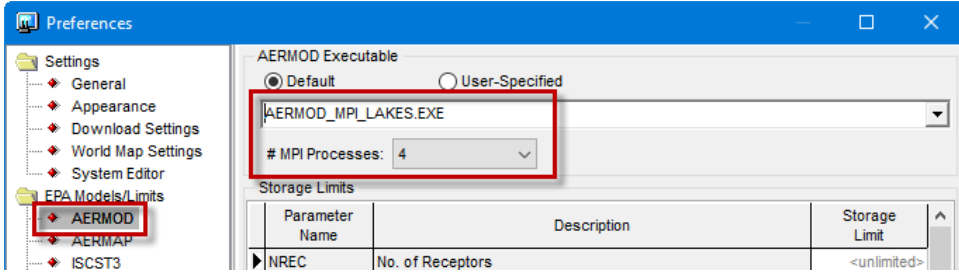
Topic	Feature Description
<p>Source Pathway</p>	<p>Building Downwash Disabled for Some Older Projects</p> <p>Some projects built in older versions of AERMOD View disabled the Building Downwash option each time they were opened in Version 10.0.0. This has been corrected.</p> <p>Note: Users who opened existing projects in Version 10.0.0 should verify the Building Downwash selection in Version 10.0.1.</p> 
<p>Sources</p>	<p>Replace Existing Sources Using Spreadsheet Template</p> <p>The new Replace Existing Sources feature in Version 10.0.0 only applied when importing files in the AERMOD input file format. This functionality now applies to importing sources using the Lakes Format spreadsheet template.</p>
<p>Models</p>	<p>Dates Added to Unnumbered Executables in Preferences</p> <p>The unnumbered model executables (AERMOD.EXE, AERMOD_MPI_LAKES.EXE) now include a Release Date to clarify which version of the model it refers to.</p> 

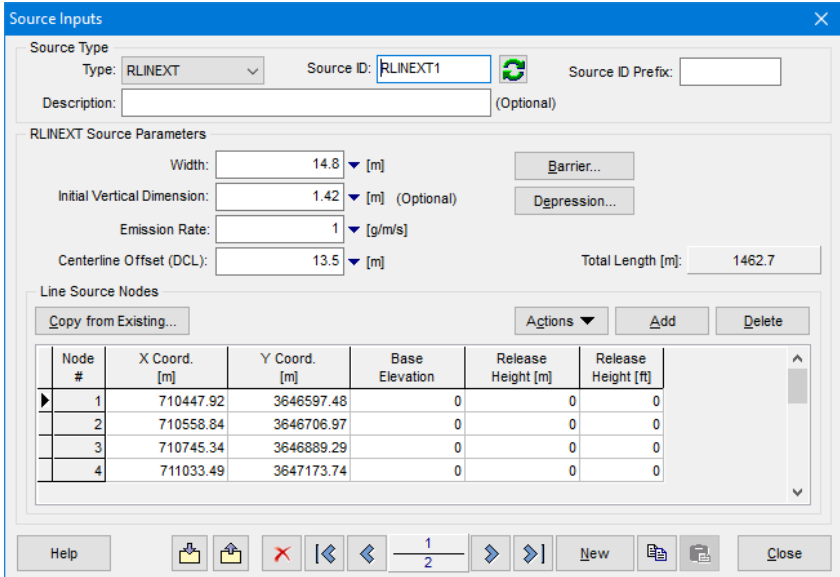
AERMOD View™ Version 10.0

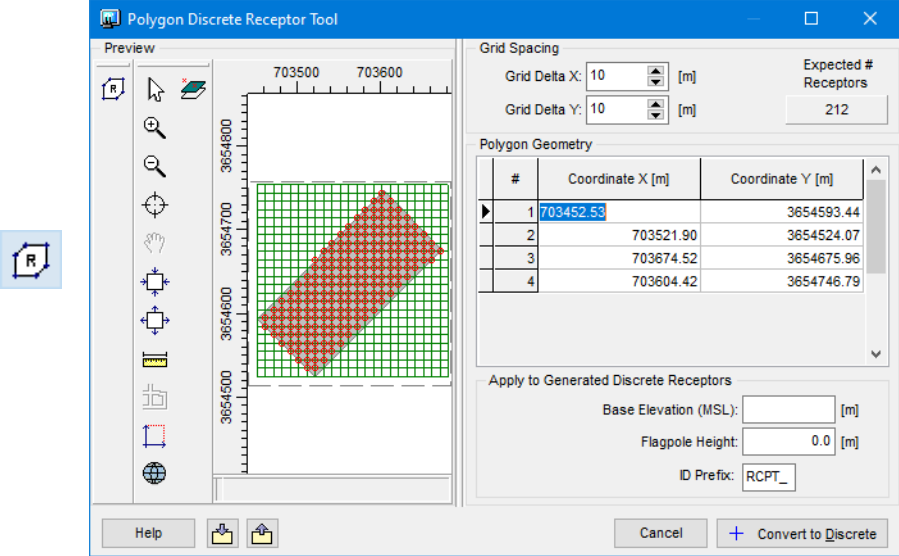
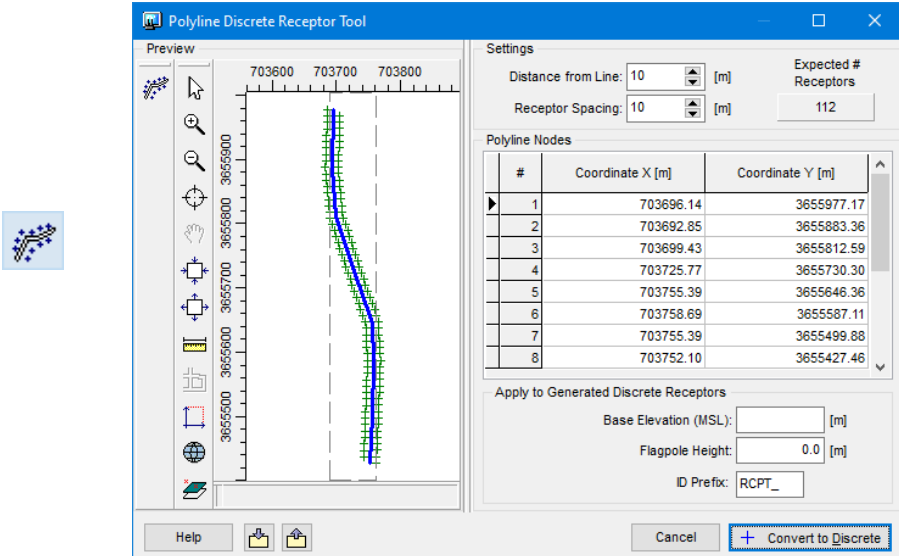
Release Notes

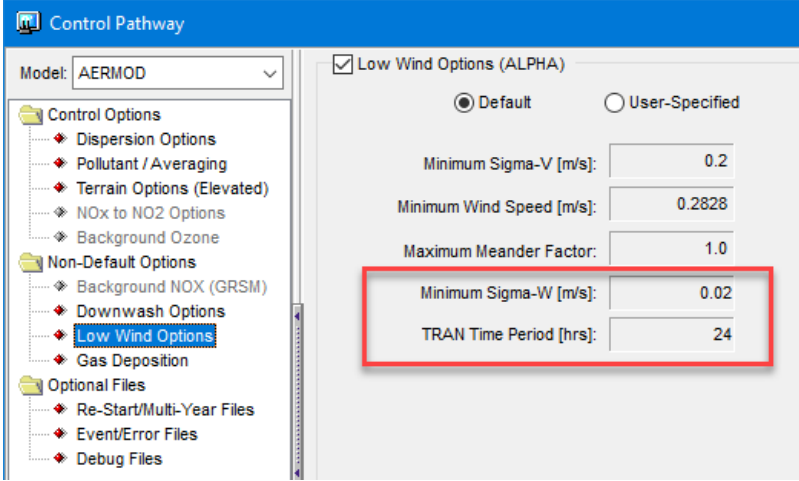
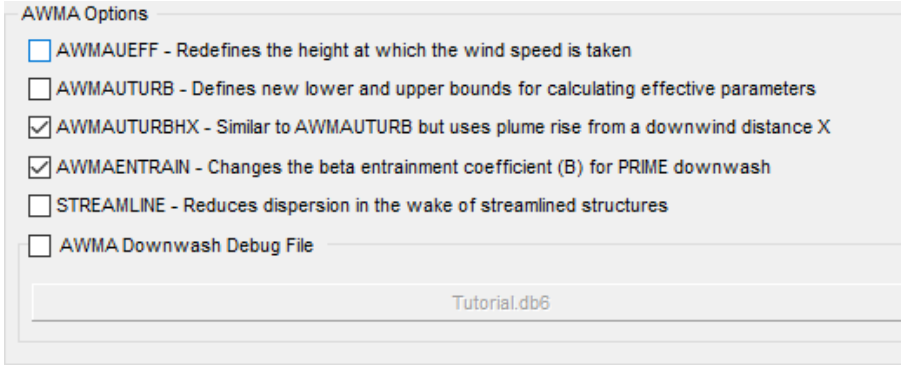
June 24, 2021

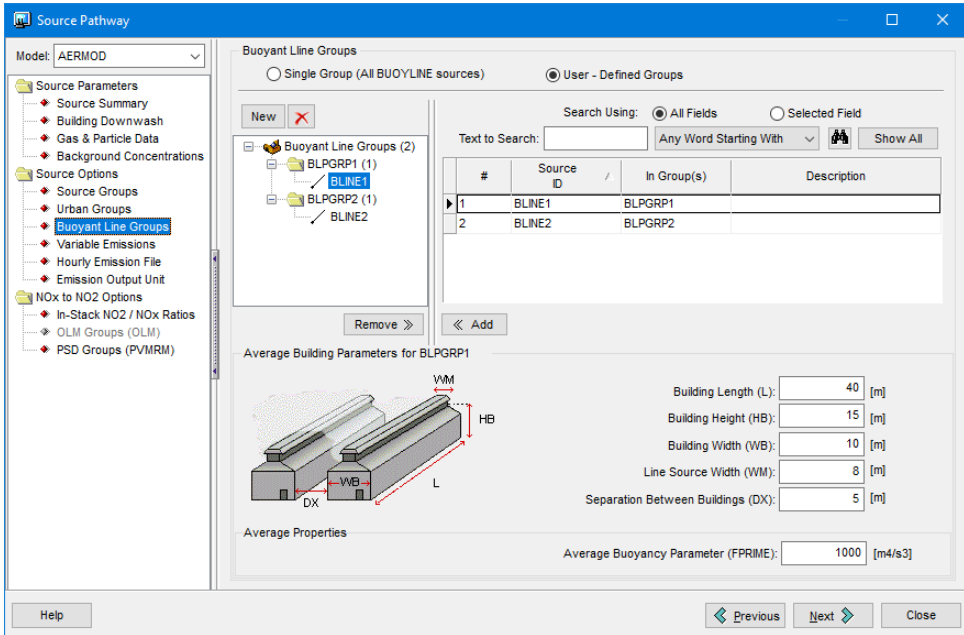
New Features

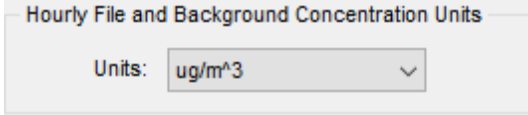
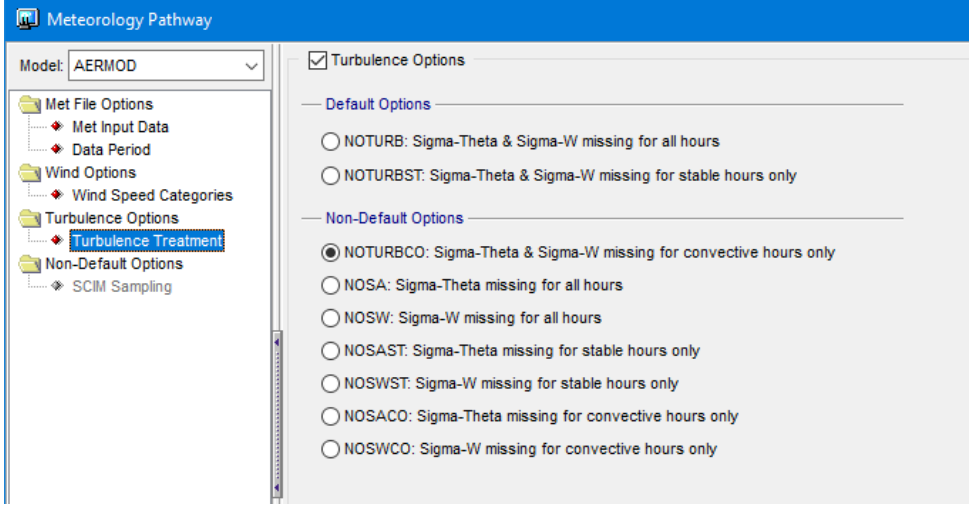
Topic	Feature Description						
<p>AERMOD</p>	<p>Latest Release of U.S. EPA AERMOD Model Available – Dated 21112</p> <p>The following U.S. EPA Models were released on May 11, 2021 and are incorporated into AERMOD View Version 10.0:</p> <ol style="list-style-type: none"> 1. AERMOD.EXE is the latest version 21112 (32-Bit Version) 2. AERMOD_21112_X32.EXE – The same as above (32-Bit Version) 3. AERMOD_21112_X64.EXE – 64-Bit Version <p>See the Model Change Bulletin for a list of changes and bug fixes: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_mcb15_v21112.pdf</p>						
<p>AERMOD MPI</p>	<p>New Version of Lakes AERMOD MPI 21112 (Parallel Version)</p> <p>A new version of the Lakes AERMOD MPI for the US EPA Model Version 21112 is now available (AERMOD_MPI_LAKES_21112.exe). Install includes 64-bit and 32-bit versions. You can specify to use this model under the Preferences dialog.</p> <p>Note: AERMOD_MPI_LAKES_21112.EXE or AERMOD_MPI_LAKES.EXE will run the latest version of the AERMOD model (21112) in parallel mode using <u>up to a maximum of 8 cores</u>.</p>  <table border="1" data-bbox="683 1696 1409 1770"> <thead> <tr> <th>Parameter Name</th> <th>Description</th> <th>Storage Limit</th> </tr> </thead> <tbody> <tr> <td>NREC</td> <td>No. of Receptors</td> <td><unlimited></td> </tr> </tbody> </table>	Parameter Name	Description	Storage Limit	NREC	No. of Receptors	<unlimited>
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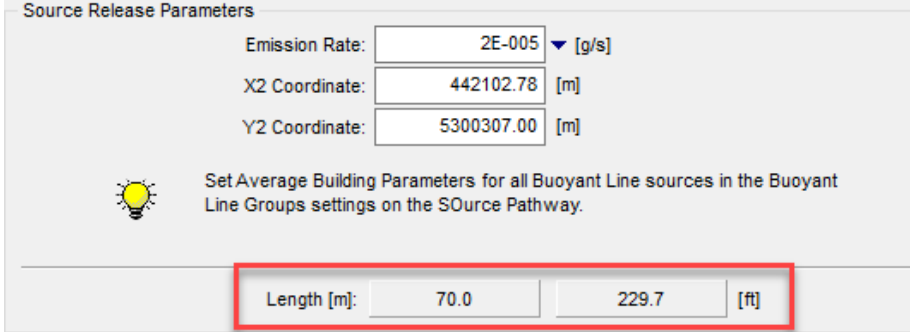
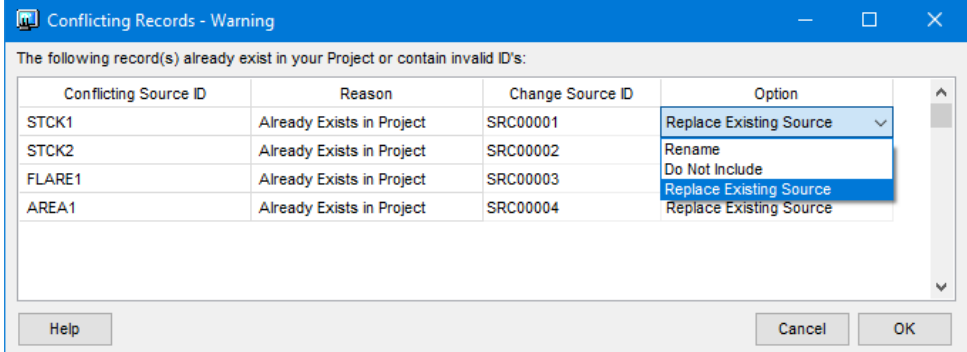
Topic	Feature Description
<p>AERMET</p>	<p>Latest Release of U.S. EPA AERMET Model Available – Dated 21112</p> <p>The following U.S. EPA Models were released on May 11, 2021 and are incorporated into AERMET View Version 10.0:</p> <ul style="list-style-type: none"> • AERMET.EXE is the latest version 21112 (32-Bit Version) • AERMET_21112_X32.EXE – The same as above (32-Bit Version) • AERMET_21112_X64.EXE – 64-Bit Version <p>See the Model Change Bulleting for a list of changes and bug fixes: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/met/aermet/aermet_mcb10.pdf</p>
<p>Sources</p>	<p>Support for ALPHA RLINEXT Roadway Source Type</p> <p>RLINEXT – the extended RLINE source type which includes support for depressed roadbeds and roadside barriers – is now fully supported in AERMOD View. This type features several differences from the RLINE implementation:</p> <ul style="list-style-type: none"> • Emissions are assigned in g/m/s (not $g/(s \cdot m^2)$ as in RLINE). • Use the Centerline Offset (DCL) parameter to characterize the source as one or more lanes to one side of the drawn polyline. This is useful for representing traffic from one direction of a highway, for example. • Use the Copy from Existing button to create sources that are based on the same polyline nodes. • Use the Barrier... or Depression... buttons to input settings for these additional road characteristics. 

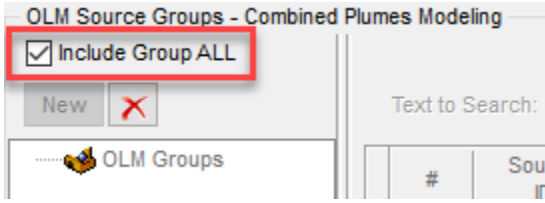
Topic	Feature Description
<p>Receptor Pathway</p>	<p>New Polygon Discrete Receptor Tool</p> <p>This new receptor tool allows users to create a series of discrete receptors which fill a user-defined polygonal space in a Cartesian grid pattern. This is useful in cases where receptors are needed in well-defined polygons like on top of buildings or within a sensitive residential neighborhood, for example.</p> 
<p>Receptor Pathway</p>	<p>New Polyline Discrete Receptor Tool</p> <p>Another new receptor tool allows users to define a polyline around which discrete receptors are placed at an even distance from the line. This tool can be used to add receptors which follow a roadway.</p> 

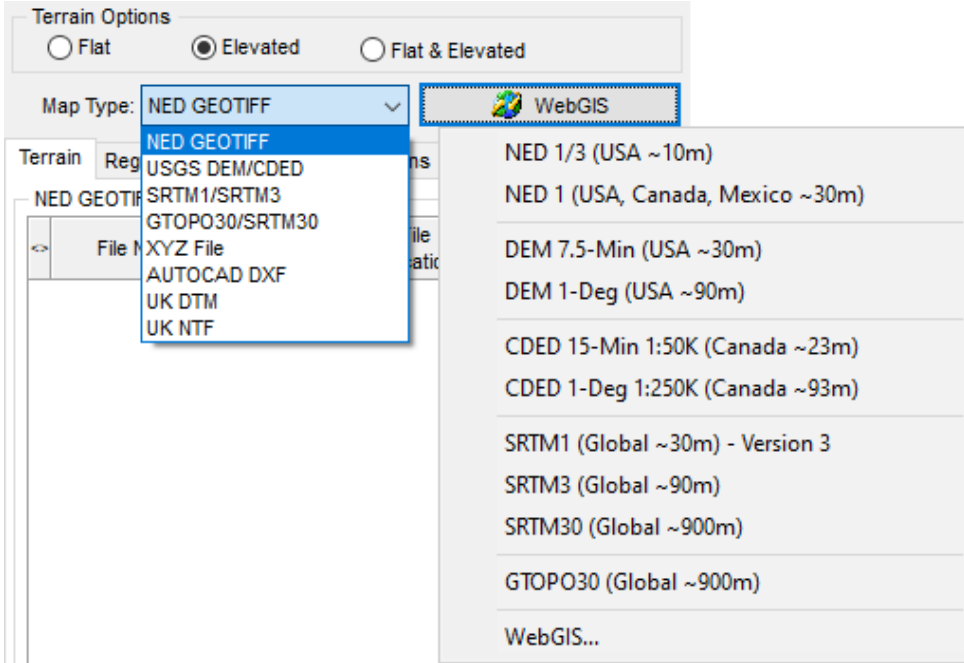
Topic	Feature Description
<p>Control Pathway</p>	<p>New ALPHA Low Wind Options</p> <p>AERMOD Model Version 21112 adds two additional Low Wind Options:</p> <ul style="list-style-type: none"> • Minimum Sigma-W for handling vertical turbulence • TRAN Time Period for setting the time scale at which wind data at the source is no longer correlated to a downwind receptor. 
<p>Control Pathway</p>	<p>New ALPHA Building Downwash Options</p> <p>AERMOD Model Version 21112 contains two new additions to the research-grade downwash options implemented by the Air & Waste Management Association (AWMA): AWMAUTURBHX & AWMAENTRAIN.</p> <p>These options remain Non-Default ALPHA options meaning they are provided for testing and evaluation purposes.</p> 

Topic	Feature Description
Sources	<p>Buoyant Line Groups for Average Building Properties</p> <p>AERMOD Model Version 21112 introduces a new buoyant line group function (BLPGROUP keyword on the Source Pathway). This feature allows for multiple groups with unique average building properties in a single AERMOD project. This allows users to define sets of buoyant lines with different orientations.</p> <p>In AERMOD View, the Buoyant Line Groups function was added to the Source Pathway. This replaces the Average Properties button previously on the Source Inputs dialog for buoyant line sources.</p> <p>All lines within a single group must be parallel to one another.</p>  <p>Note: This feature does not change or replace Source Groups for reporting results in the model output files. For calculating effects from one or more sources, modelers must still include a source group via the Source Groups option.</p>
Source Pathway	<p>Gas & Particle Data Default Parameters</p> <p>AERMOD Model Version 21112 will now employ default Gas Phase Options and Method 2 particle deposition parameters for specific pollutant IDs. For the pollutant IDs listed below, entering values of 0 for the above parameters will automatically enable default values in the model's calculations:</p> <ul style="list-style-type: none"> • Gas Phase: NO2, SO2, OTHER (as HG0, HGII, TCDD, or BAP) • Method 2: OTHER (as AR, CD, PB, HG, or POC)

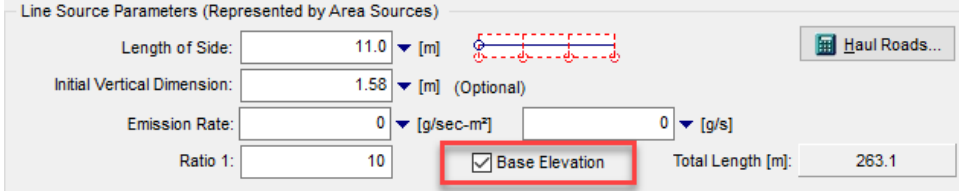
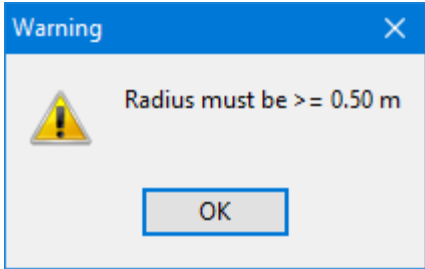
Topic	Feature Description
<p>Source Pathway</p>	<p>Background Concentrations Units Update</p> <p>AERMOD Model Version 21112 separates the Background Concentrations unit selection by pollutant:</p> <ul style="list-style-type: none"> • For NO₂, SO₂, or CO, users can choose from ug/m³, PPB, or PPM • All other pollutants must use ug/m³ 
<p>Meteorology Pathway</p>	<p>New Option to Disable Meteorology Turbulence Parameters</p> <p>AERMOD Model Version 21112 allows users to ignore non-missing values for turbulence data (sigma-θ or sigma-w) from the profile meteorology file (*.PFL). This facilitates use of meteorological data from an offsite location without needing to re-run AERMET.</p> <p>Both turbulence parameters can be ignored for all hours or for stable hours only in regulatory Default mode.</p> <p>When running in Non-Default mode, all turbulence can be ignored for convective hours, or each parameter can be ignored separately for all, stable, or convective hours only using the defined model options.</p> 

Topic	Feature Description
<p>Sources</p>	<p>Length Field Added to Buoyant Line Source Inputs Dialog</p> <p>An auto-calculated Length field has been added to all Buoyant Line sources so users can more easily verify their source data within the Source Inputs dialog.</p> 
<p>Sources</p>	<p>Replace Existing Sources When Importing</p> <p>The Import Sources function now permits users to replace data for existing source IDs via the Conflicting Source IDs dialog.</p> <p>When using this option, the source parameters for the existing source will be updated using the data from the imported file, but other properties (e.g., Source Groups, Urban Groups) associated with the source ID will remain.</p> 
<p>Source Pathway</p>	<p>Gas & Particle Data Export to XLSX</p> <p>Data for deposition analysis input via the Gas & Particle Data can now be exported to XLSX in addition to the existing XLS functionality.</p>

Topic	Feature Description																																													
<p>Source Pathway</p>	<p>Automatic Application of OLMGROUP ALL</p> <p>When using the Ozone Limiting Method (OLM) NO2 conversion routine, the U.S. EPA recommends use of the OLMGROUP ALL model option which combines plumes from all sources when considering pollutant concentrations.</p> <p>This option is now employed by default when enabling OLM.</p> 																																													
<p>Receptor Pathway</p>	<p>Additional Plant Boundary Export Options</p> <p>Cartesian plant boundary data can now be exported to an Excel spreadsheet in XLSX format as well as CSV format. Previously, the export function only supported XLS format.</p>																																													
<p>Reports</p>	<p>Percentile Labels Added</p> <p>In the Results Summary and Sensitive Receptor Results reports, labels were added to more clearly define which rows represent percentile output.</p> <div style="background-color: black; color: white; padding: 5px; text-align: center; font-weight: bold;">Results Summary</div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th colspan="5" style="background-color: #e0e0e0;">NOX - Concentration - Source Group: ALL</th> </tr> <tr> <th>Averaging Period</th> <th>Rank</th> <th>Peak</th> <th>Units</th> <th></th> </tr> </thead> <tbody> <tr> <td>3-HR</td> <td>1ST</td> <td>33.08606</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>24-HR</td> <td>1ST</td> <td>20.45625</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>3-HR</td> <td>2ND</td> <td>29.59091</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>24-HR</td> <td>2ND</td> <td>20.30930</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>ANNUAL</td> <td></td> <td>5.05519</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>3-HR</td> <td>95.00pct</td> <td>21.24587</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>24-HR</td> <td>95.00pct</td> <td>15.75993</td> <td>ug/m^3</td> <td>44</td> </tr> </tbody> </table>	NOX - Concentration - Source Group: ALL					Averaging Period	Rank	Peak	Units		3-HR	1ST	33.08606	ug/m^3	44	24-HR	1ST	20.45625	ug/m^3	44	3-HR	2ND	29.59091	ug/m^3	44	24-HR	2ND	20.30930	ug/m^3	44	ANNUAL		5.05519	ug/m^3	44	3-HR	95.00pct	21.24587	ug/m^3	44	24-HR	95.00pct	15.75993	ug/m^3	44
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24-HR	95.00pct	15.75993	ug/m^3	44																																										

Topic	Feature Description
<p>Terrain Processor</p>	<p>Default Map Type and WebGIS Reordering</p> <p>Following recommendations from the U.S. EPA regarding the preferred terrain data format for AERMAP, the NED GEOTIFF Map Type has been set as the default format in the Terrain Processor and the NED options have been moved to the top of the WebGIS download list.</p>  <p>The screenshot shows the 'Terrain Options' dialog box. Under 'Map Type', 'NED GEOTIFF' is selected. The 'WebGIS' section of the interface is expanded, showing a list of terrain data sources. 'NED 1/3 (USA ~10m)' is the first item in the list, followed by 'NED 1 (USA, Canada, Mexico ~30m)', 'DEM 7.5-Min (USA ~30m)', 'DEM 1-Deg (USA ~90m)', 'CDED 15-Min 1:50K (Canada ~23m)', 'CDED 1-Deg 1:250K (Canada ~93m)', 'SRTM1 (Global ~30m) - Version 3', 'SRTM3 (Global ~90m)', 'SRTM30 (Global ~900m)', 'GTOPO30 (Global ~900m)', and 'WebGIS...'.</p>
<p>Project Status</p>	<p>Error Check Optimization</p> <p>The process of validating project details has been optimized to ensure all project inputs are verified.</p>

Fixed Issues

Topic	Feature Description
<p>Source Pathway</p>	<p>Added Flat Option for All Source Types</p> <p>When modeling with the non-default option to set individual sources to FLAT mode, not all source types included a checkbox for disabling elevation values. This checkbox has been added to the Line Area, RLINE, & RLINEXT source types.</p> 
<p>Source Pathway</p>	<p>Circular Area Radius Warning</p> <p>A warning message is now immediately displayed if the user-defined radius is less than 0.50 meters which is the coded limit on this variable.</p> 
<p>Source Pathway</p>	<p>Auto-Generated Source Groups Support for Buoyant Lines</p> <p>Because AERMOD has specific standards regarding the order of buoyant lines in the model input file, buoyant line sources caused unexpected behavior in the Auto-Generated Source Groups tool when the source IDs were not in alphabetical order. A fix has been applied.</p>
<p>Meteorology Pathway</p>	<p>Reading Short Data Files</p> <p>An error was generated in AERMOD View when reading surface (*.SFC) and profile (*.PFL) files containing only one hour of data. This has been fixed.</p>

Fixed Issues (Continued)

Topic	Feature Description
Receptor Pathway	<p>Long Source IDs for Discrete Polar Receptors</p> <p>Previous versions of AERMOD View would only write 10 characters for individual source IDs when processing Discrete Polar receptors. AERMOD View now supports full 12-character IDs for these receptors.</p>
Plots	<p>Multi-Chemical Plots Displayed in Project Copies</p> <p>When creating a project copy with the File Save Project As menu command, plot files created by the Multi-Chemical Run utility were included in the copy but not shown in the Plots tab by default. Now, opening the project copy will display these plots as they appeared in the original project.</p>
Terrain Processor	<p>GEOTIFF File Reading</p> <p>Updated visualization routines for custom GEOTIFF files to match AERMAP's reading behavior. If multiple images are found within the file, the Terrain Processor now reads the first image just like AERMAP.</p>
Base Maps	<p>Shapefile Inspector</p> <p>Addressed an issue where an error was displayed when attempting to click and view attributes for imported shapefiles in the main display. All attributes can now be viewed using the Inspect context menu option.</p>
Batcher	<p>Separate Drive Support</p> <p>When working with input files stored on a separate hard disk, Batcher would sometimes fail to progress when the data files were created using an older version of AERMOD View. Batcher now progresses as expected in these cases.</p>