



Elevation add-in for ArcGIS Pro: User Guide



SIGGIS NV
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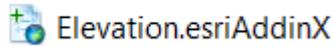
1 INTRODUCTION

This document is a user guide and provides a description on how to install and use Elevation, an add-in, developed by SIGGIS, for Esri ArcGIS Pro. It provides the ability to see depth or elevation on a certain line over raster layers and to see which parts of a raster are lower in altitude than a selected pixel.

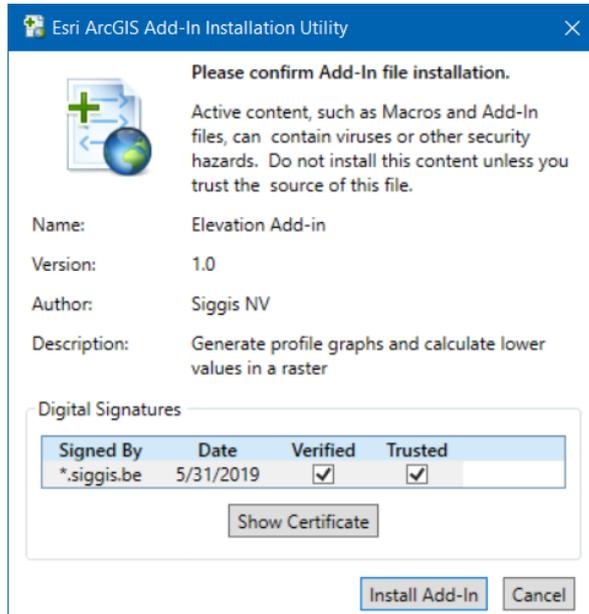
2 INSTALLATION

ArcGIS Pro version 2.2 or above is required.

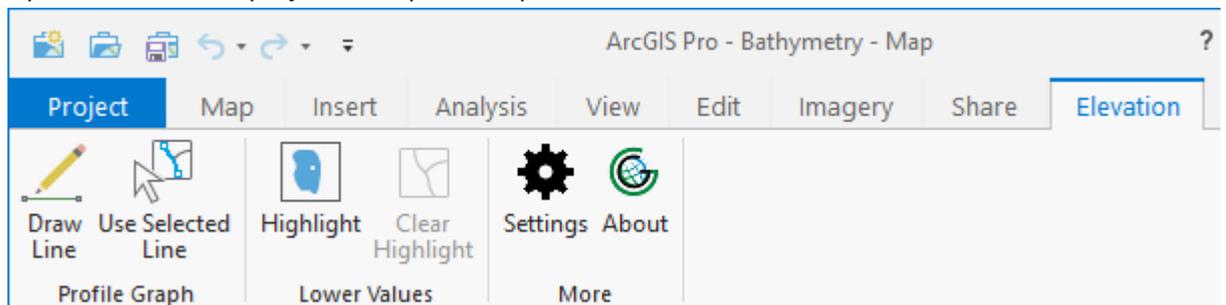
- Close ArcGIS Pro
- Download and open the. esriAddInX file



- Click **Install Add-in**, then **Ok**



- Open an ArcGIS Pro project and open a map. The **Elevation** tab is now available.

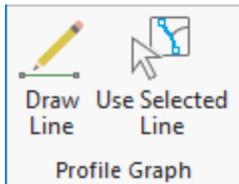


This add-in does operations on raster layers, so you should add at least one raster layer to the map.

3 PROFILE GRAPH TOOLSET

The profile graph toolset allows you to analyze the elevation profile of any raster layer along a line. This line can either be drawn on the spot or it can be an existing selected line feature. The results appear in a dock pane called “Profile Graph”.

The **Profile Graph** ribbon group consists of tool **Draw Line** and button **Use Selected Line**.

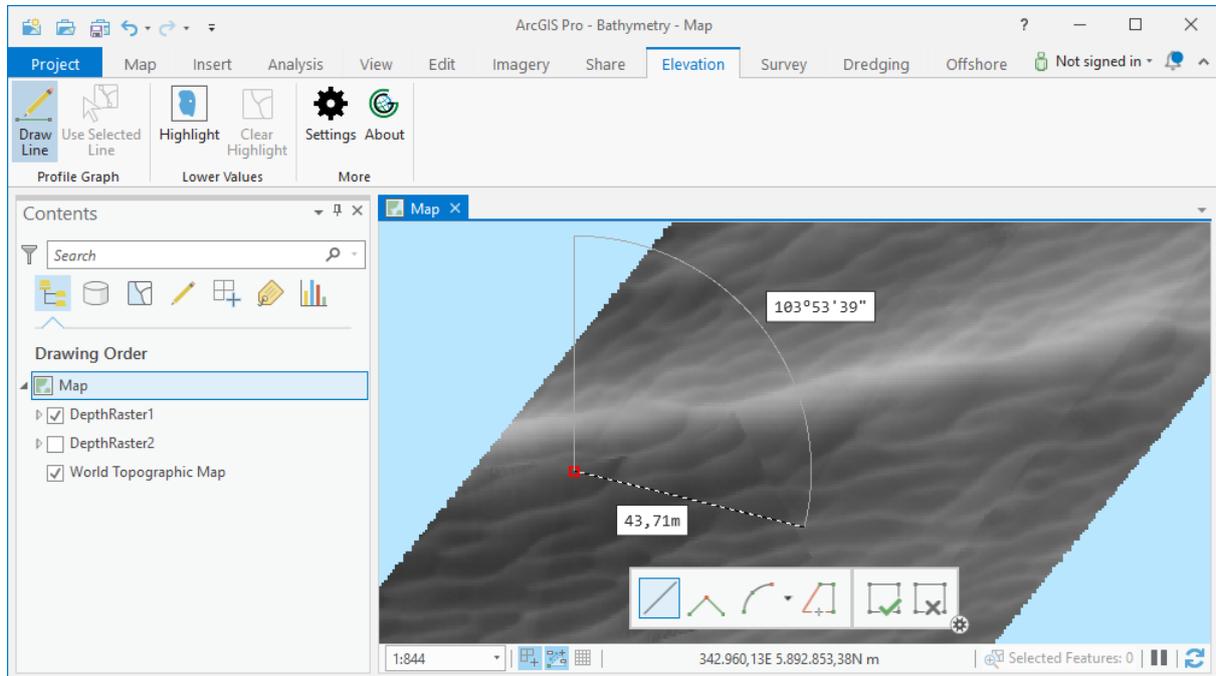


Draw Line is a tool. Tools, when clicked, are activated and are only deactivated by activating another tool. There is always an active tool. This tool can also be deactivated by right-clicking on the map, which activates the ArcGIS Pro’s default tool. (That’s the **Explore** tool on the **Map** tab).

Use Selected Line is a button. That means that, when clicked, it accomplishes its task once. There is no activation and deactivation.

3.1 DRAW LINE

If the **Draw Line** tool is activated, every time you click somewhere on the map, a polyline sketch will start to draw.



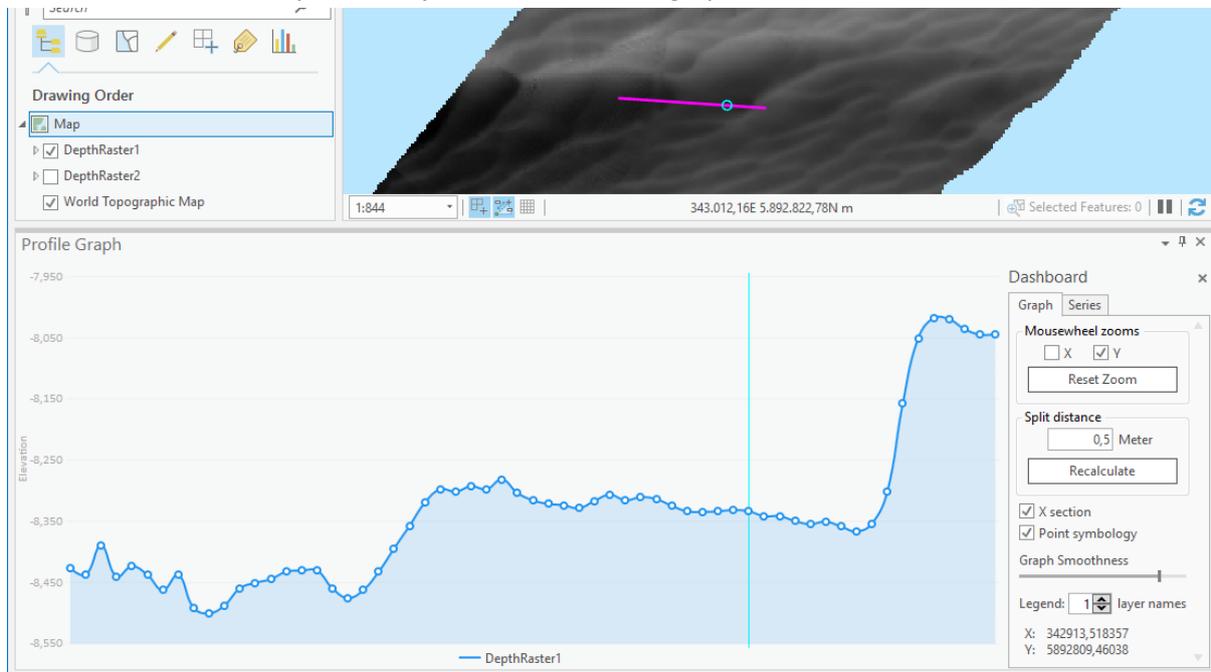
Double-click to stop drawing the line. The depth (or height) profile starts calculating immediately. The results are shown in the **Profile Graph** dock pane, which appears at the bottom of the ArcGIS Pro window.

3.2 USE SELECTED LINE

To use this button, there must be one and only one selected line feature. The results are shown in the **Profile Graph** dock pane, which appears at the bottom of the ArcGIS Pro window.

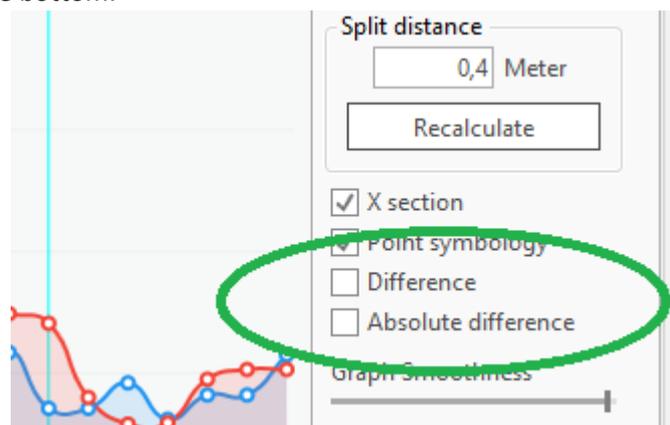
3.3 THE PROFILE GRAPH DOCK PANE

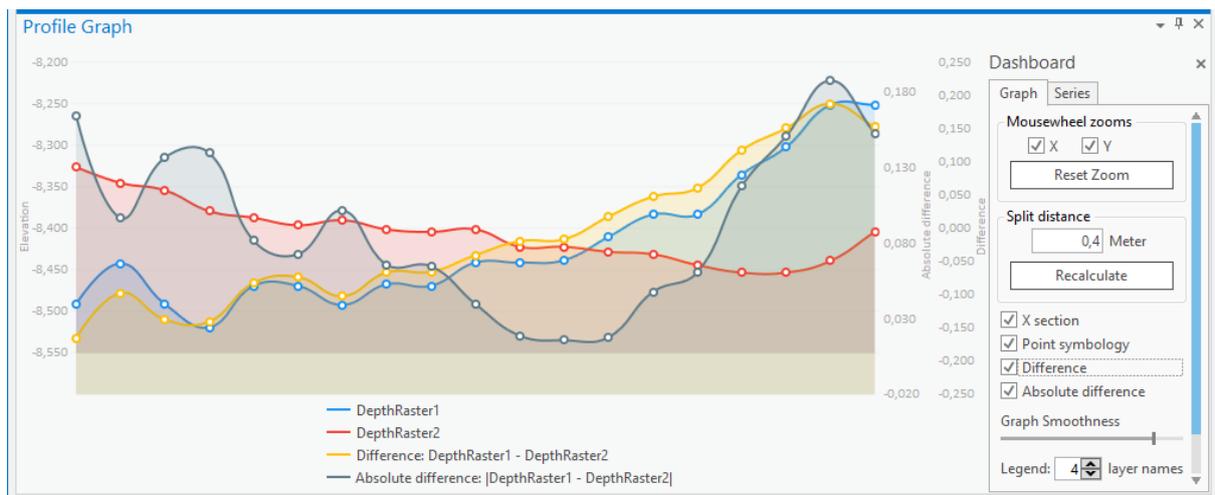
When the **Profile Graph** dock pane appears, it is by default docked at the bottom of the ArcGIS Pro window, but it can be undocked and docked elsewhere manually. It shows the elevation profile along the line connecting the begin and end points of a drawn or selected line. It also has a Dashboard area, where you can adjust the view on the graph.



If the line is outside the extent of any visible raster layer, the results in the **Profile Graph** dock pane will be empty. If the line is in the extent of more than one visible raster layer, the results will show the profile graph of all those raster layers. The scale appears on the left-hand side of the graph. The names of the raster layers in the graph appear at the bottom.

If the line is in the extent of exactly two raster layers, the **Difference** and **Absolute Difference** checkboxes appear on the dashboard. Toggling the checkboxes toggles the Difference and Absolute difference series on the graph.

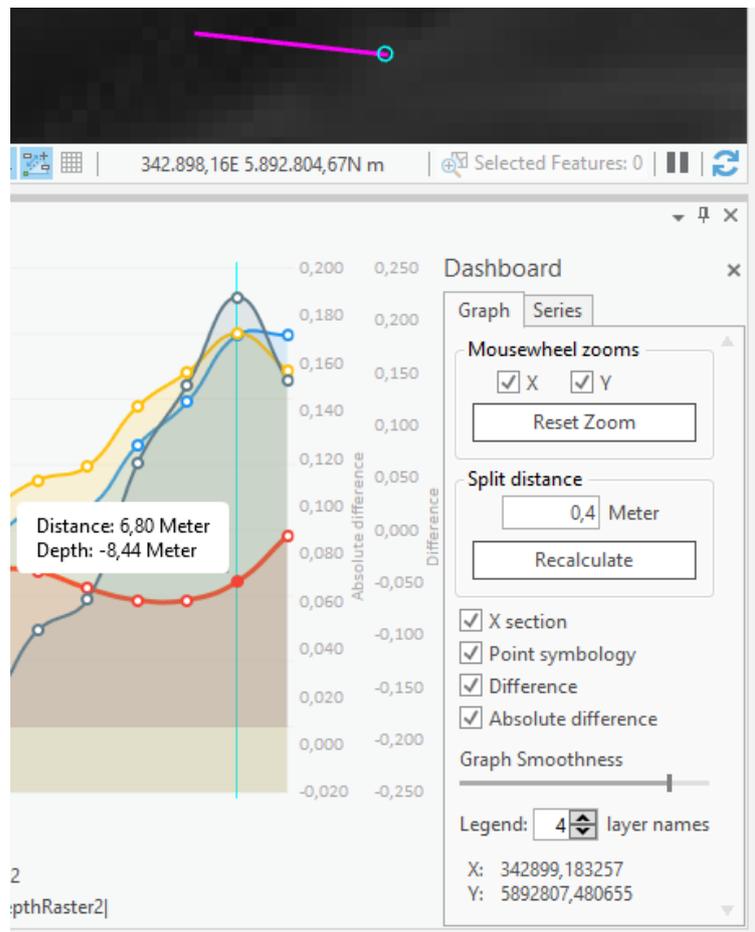




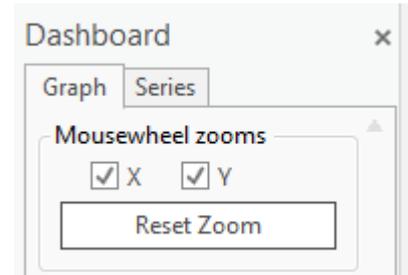
Moving the mouse over a point in the graph, will make a more information available about the point.

While moving the mouse pointer over the graph, several things happen:

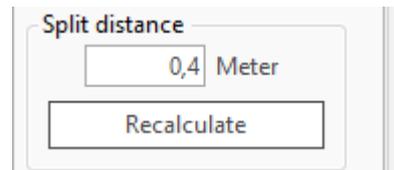
- 1) The map displays a circular indication of where you are on the line.
- 2) A vertical line in the same color follows the mouse pointer on the graph.
- 3) A tooltip-like label shows the distance to the line's starting point and the elevation value of the data point under the mouse pointer. It shows the (absolute) difference between series 1 and series 2 when hovering over a data point on the (Absolute) Difference series.
- 4) The map coordinates of the hovered data point (= the X,Y-coordinates of the circular indication on the map) are displayed on the dashboard.



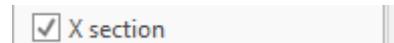
Rolling the mouse wheel when over the graph zooms in and out on the data. The zoom mode selector lets you decide in which dimensions you'd like to zoom. **Reset Zoom** undoes all zooming operations on the currently displaying graph.



The data points in the graph are a certain distance apart. By default, this distance (the **Split distance**) is the smallest cell size of the rasters contributing to the graph. If you'd like to change this distance, (e.g. to have a coarser result, or to round off to nicer numbers), you can specify a split distance yourself and **Recalculate** the graph according to this new split distance.



The **X section** checkbox toggles the vertical line's visibility.



The **Point symbology** checkbox toggles whether the data points are accentuated with a little circle.



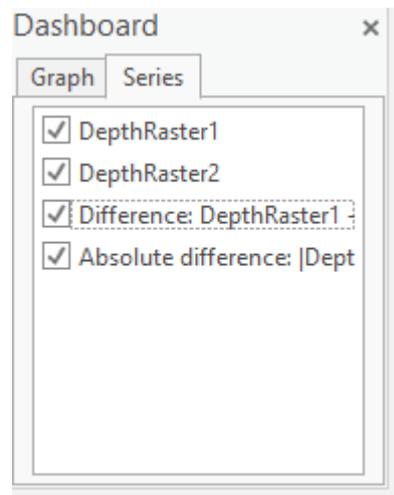
The **Graph Smoothness** slider allows for pointier (but more accurate) or curvier (but more visually appealing) graphs.



Sometimes there are so many layers in the graph that the legend takes up all the space, so the graph is no longer visible. So, you can decide how many layer names you want to see in the legend.



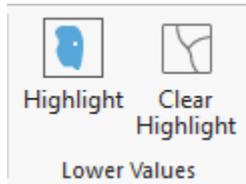
The dashboard also has a **Series** tab. Here is an exhaustive list of all the graph's series. Every series comes with a checkbox, to toggle the series' visibility in the graph.



4 LOWER VALUES TOOLSET

The lower values toolset allows you to visualize the areas in a raster layer that have a lower altitude than a certain clicked location. The results appear on the map.

The **Lower Values** ribbon group consists of tool **Highlight** and button **Clear Highlight**.

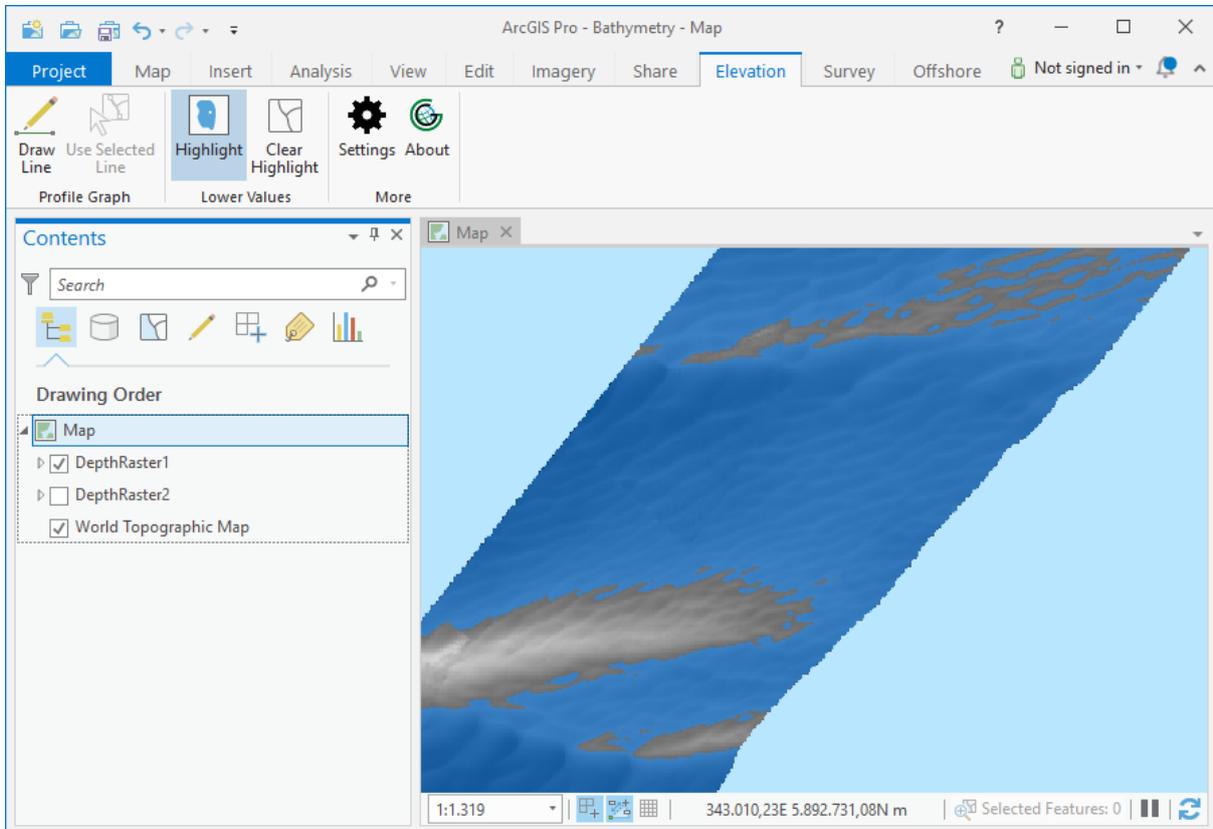


Highlight is a tool. Tools, when clicked, are activated and are only deactivated by activating another tool. There is always an active tool. This tool can also be deactivated by right-clicking on the map, which activates the ArcGIS Pro's default tool. (That's the **Explore** tool on the **Map** tab).

Clear Highlight is a button. That means that, when clicked, it accomplishes its task once. There is no activation and deactivation.

4.1 HIGHLIGHT

If the **Highlight** tool is activated, every time you click somewhere in a raster layer's extent, a polygon mask will be drawn showing the regions in the raster layer with a lower altitude than the one clicked.

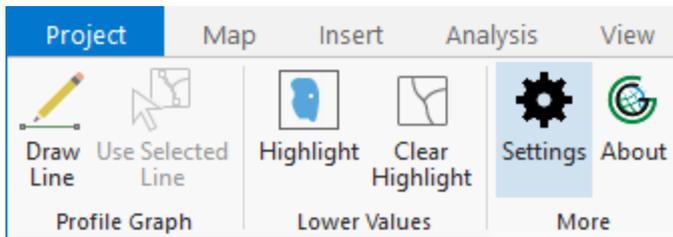


4.2 CLEAR HIGHLIGHT

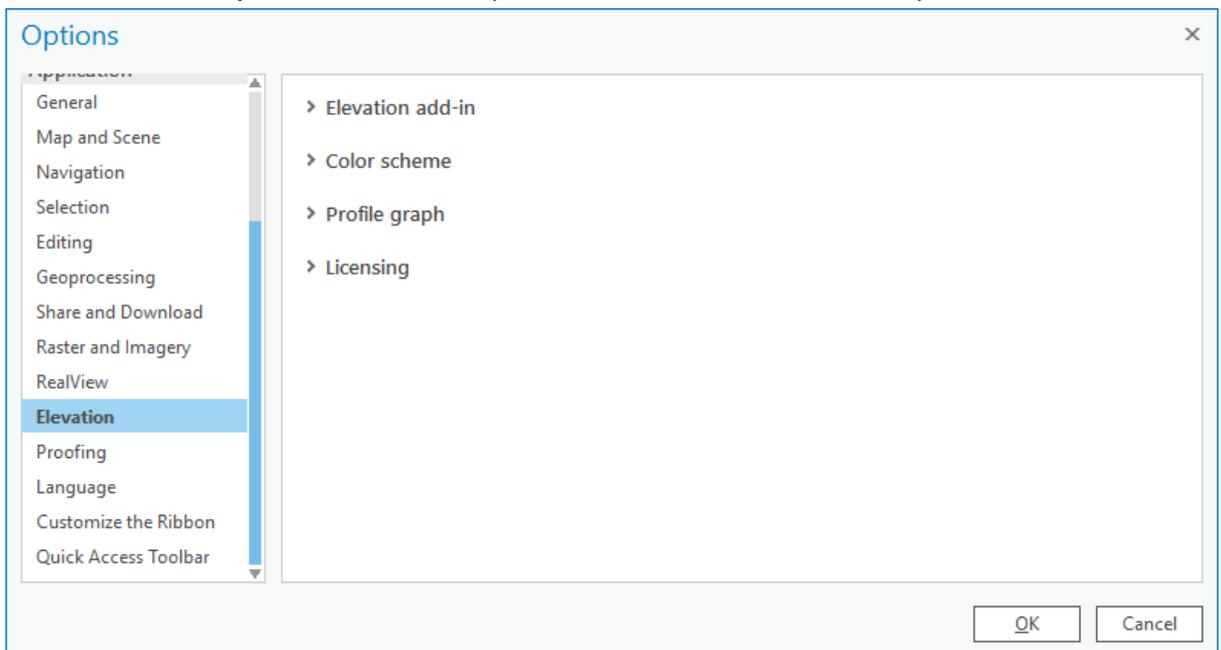
Clears the map from the highlight previously drawn by the **Highlight** tool.

5 OPTIONS

- Click ribbon button **Settings**.

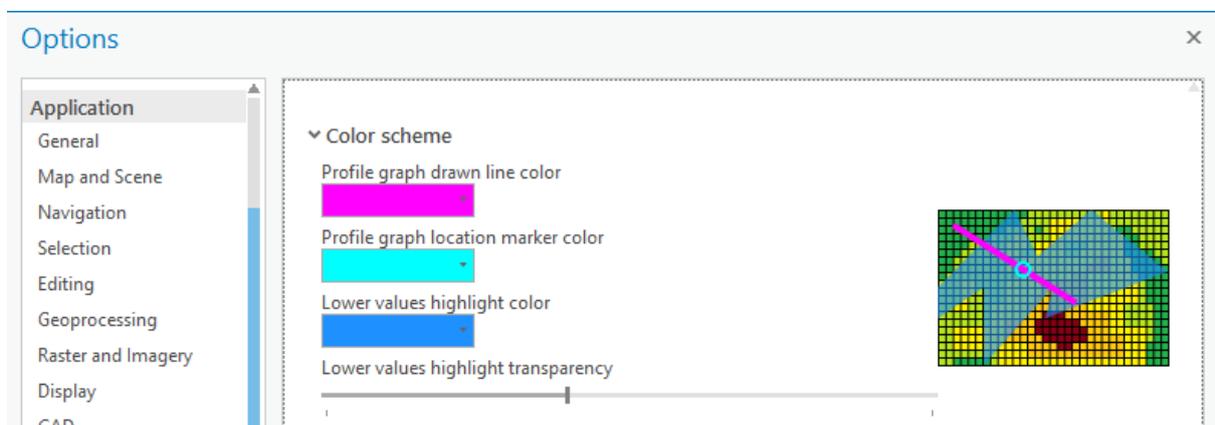


- In the ArcGIS Pro **Options** window, the options tab **Elevation** is automatically selected.



5.1 COLOR SCHEME

Select the colors that you would like to see in the add-in's user interface. There are 3 comboboxes to choose colors from. The result of the color change is immediately visible on the sample raster on the right.



5.1.1 Profile graph drawn line color

This is the color of the line for which the profile data is calculated.

5.1.2 Profile graph location marker color

This is the color of the circular marker on the drawn line, which shows the correspondence with the mouse location on the profile graph.

5.1.3 Lower values highlight color

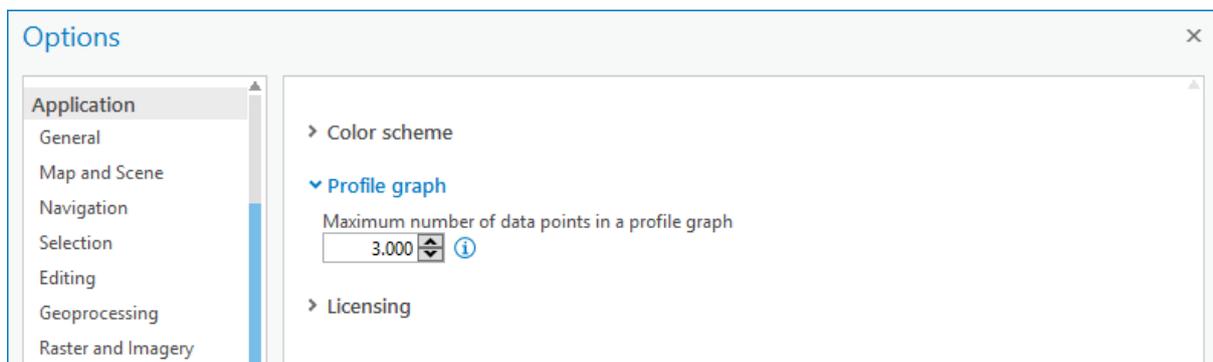
This is the color of the highlight covering the regions that are lower than the clicked point.

5.1.4 Lower values highlight transparency

Sets the transparency of the lower values highlight.

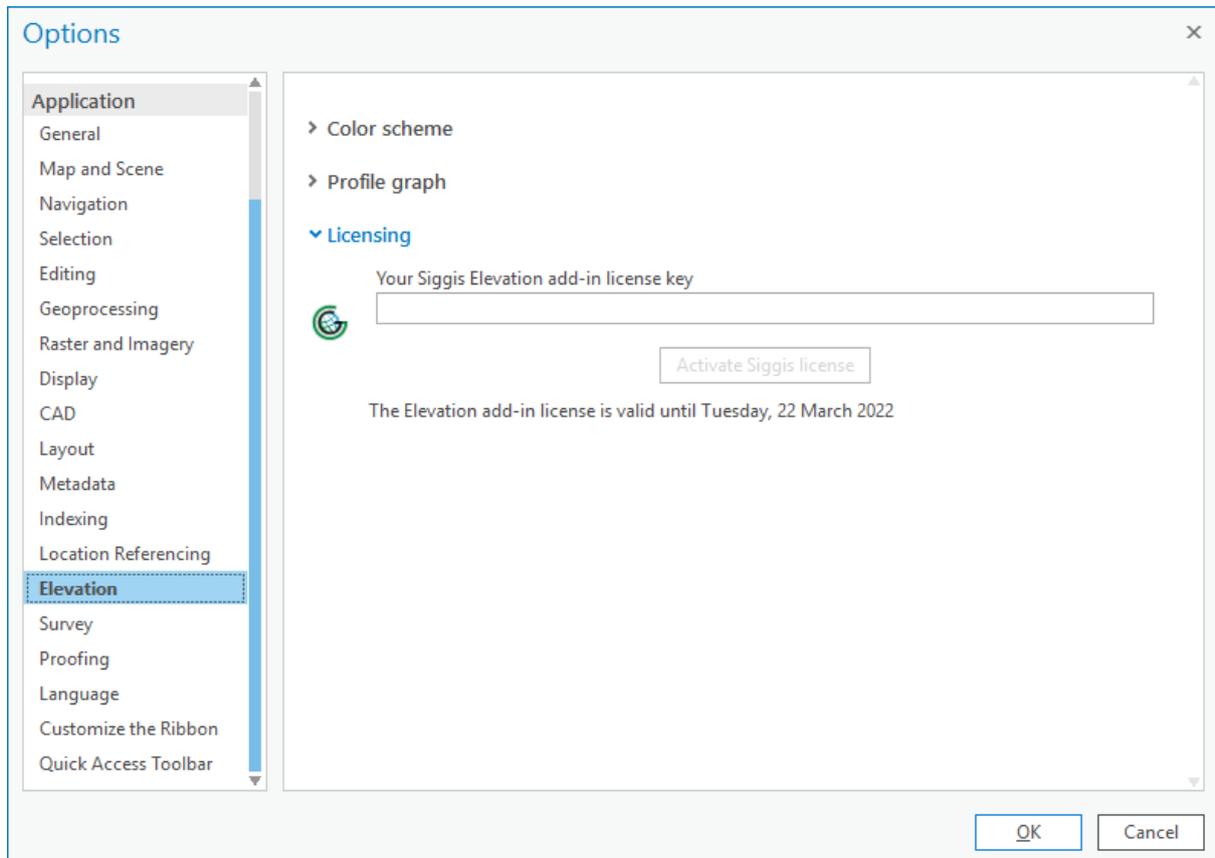
5.2 PROFILE GRAPH

5.2.1 Maximum number of points in a profile graph



Sometimes, the line that you draw or select as input for the Profile Graph, can be so long that the sheer number of data points on it make the graph calculations slow. In order to keep the user interface responsive, here you can set a maximum number of data points allowed on a profile graph. If the number of data points would exceed this limit, the split distance is automatically enlarged to keep this maximum amount of points.

5.3 LICENSING



The trial version is valid for a period of 30 days.

A license key is required to use the full version of the ArcGIS Pro Elevation add-in and can be acquired via the Esri Marketplace or by email at info@siggis.be. After the license key is obtained, copy the license key in the **SIGGIS Elevation Add-In License activation** window. Then click **Activate License**.