CREATING A FAR SCENERY USING A DEM MAP

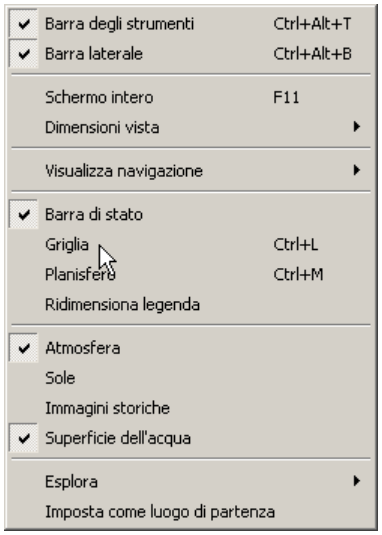
A DEM map (o HGT) is the drawing of the elevation of a map, by adding to each pixel a height value.

So, what do we need for creating our map?

- HGT maps, you can find free ones after registe ring here: https://repository.nced.umn.edu/browse.php?folder=237947
- 3DEM software, available here:
- http://freegeographytools.com/2009/3dem-website-is-gone-but-3dem-still-available-here
- Google Earth, (enough the free version)
- Google Sketchup
-

DETERMINING THE AREA

Open Google Earth and then find the area covered by the track. Enable from the ***view*** menu the option ***grid*** (sorry, I have the Italian interface, this is a simple translation)



My track covers an area with latitude N 10.71; 10.97 and longitude E 45.74; 45.80

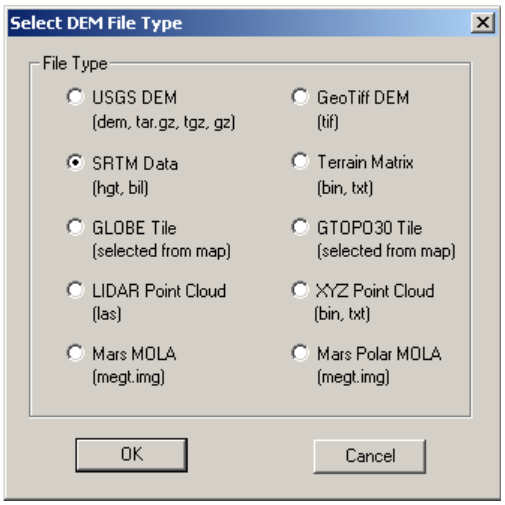
But what are those numbers?

Open the maps portal and find the DEM map closest to the previously found latitude coordinates (N45).

Here is the closet one:

Create the web request and prepare for the download. Once selected the map, we will receive a mail with a link that contains the downloadable data. This is my map:

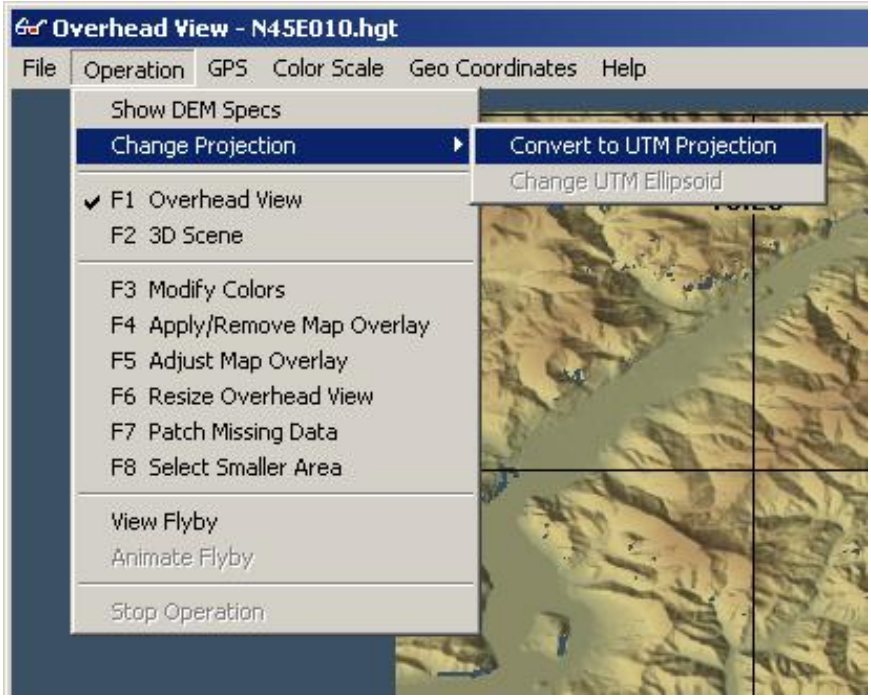
Unzip the file and open the .hgt file with 3DEM



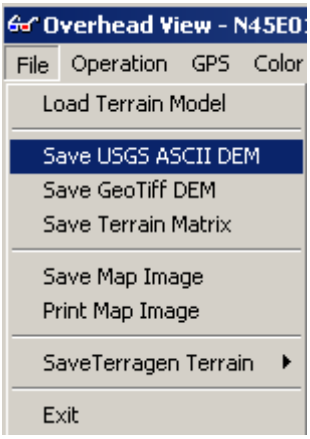
I cannot attach the image, but the covered area is really big.

Sometimes the maps are not so accurate, but you can find some alternatives by googling the name of the file (N45E010.hgt)

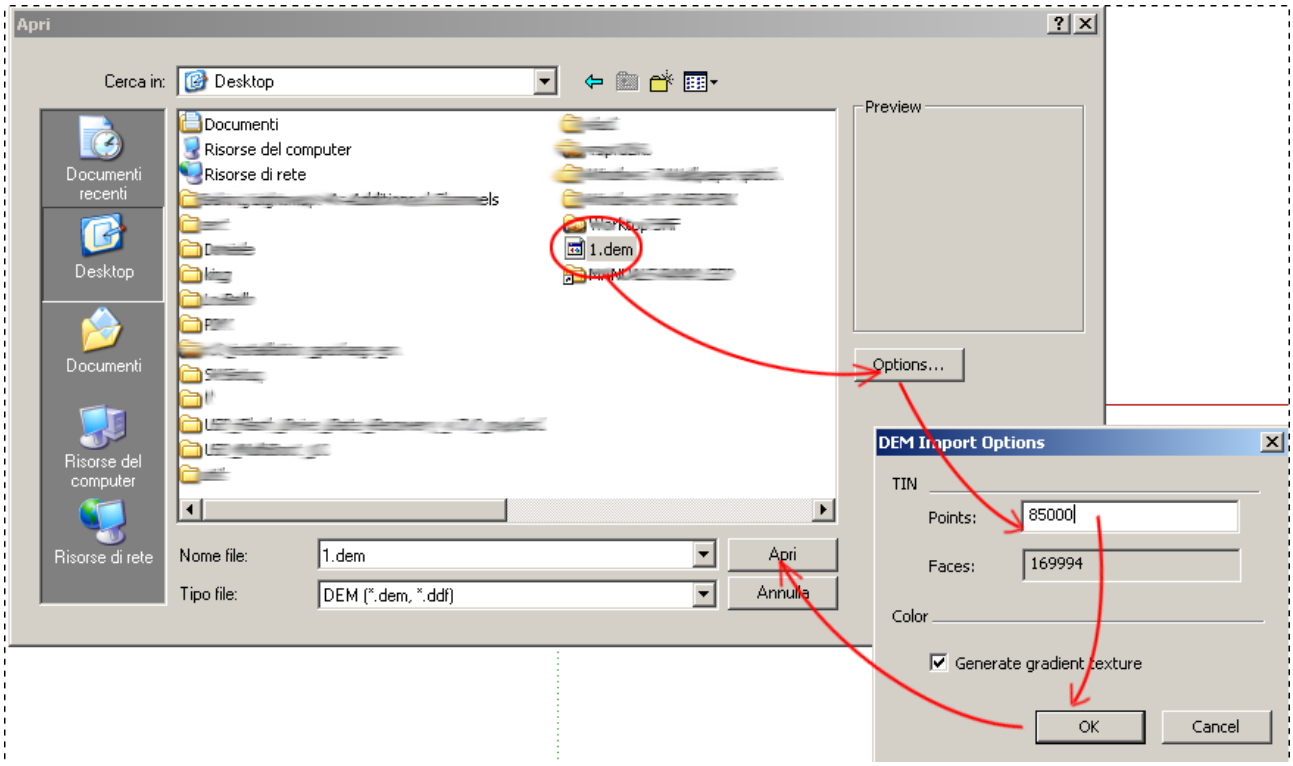
Change the map projection by aging on ***operation – change projection – convert to UTM projection***



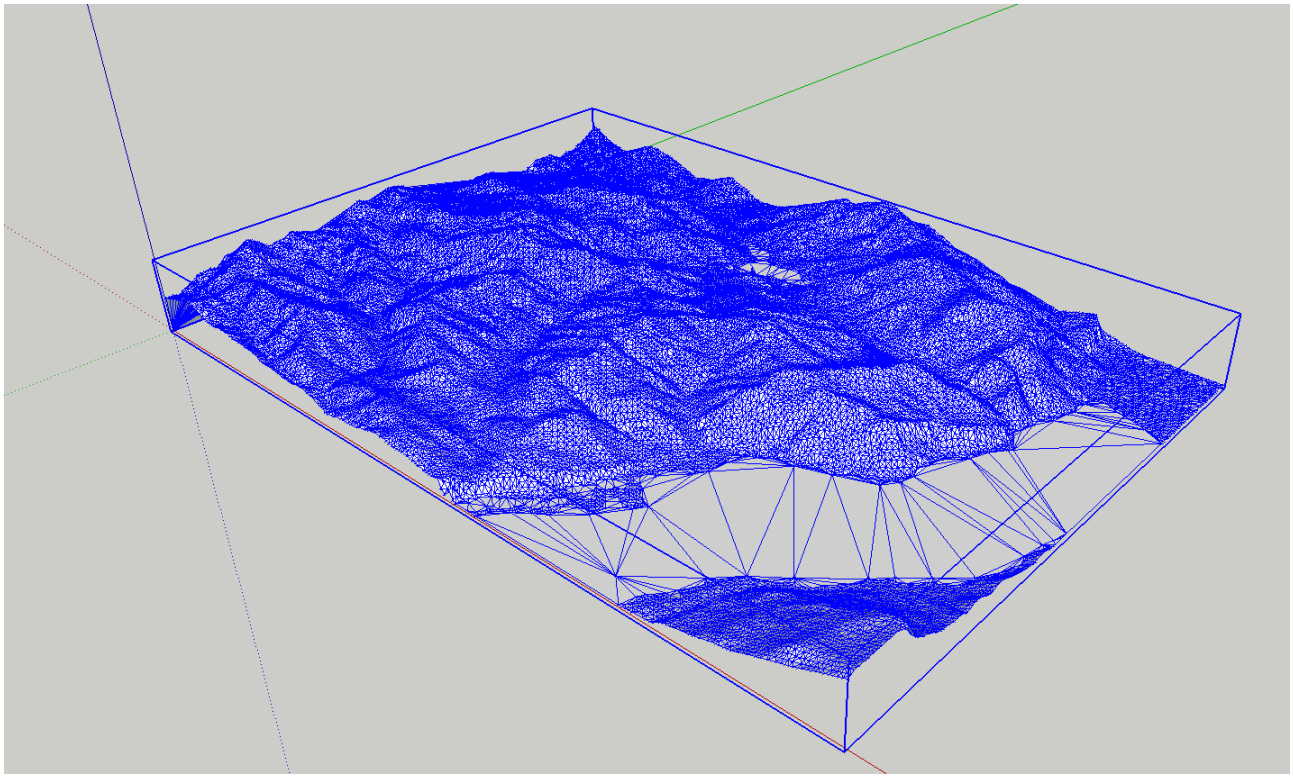
By pressing F8 key we can define a better map, and choose the interested part of the map. Once done, save the selection as a DEM map.



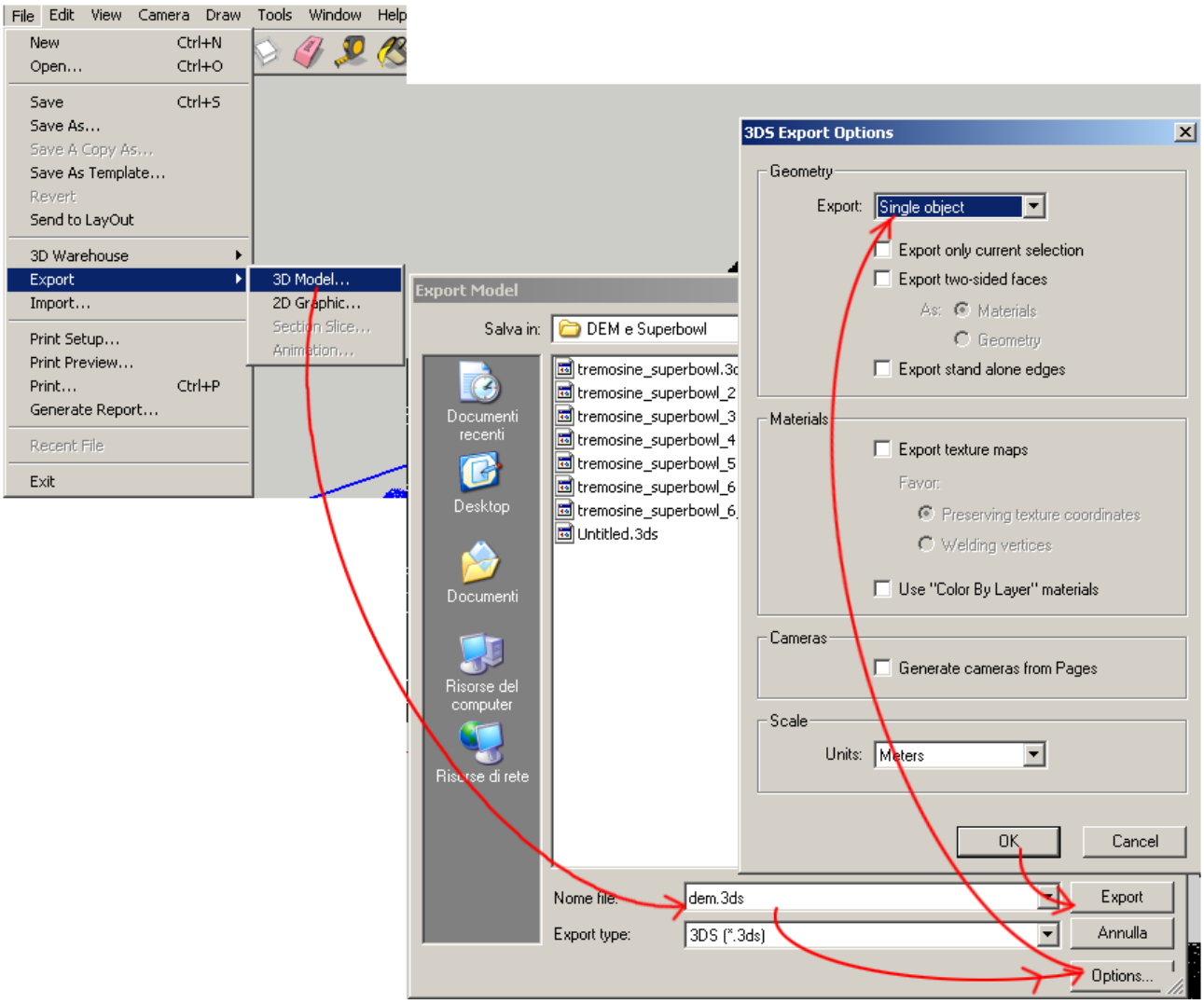
Open Google Skecthup and import the map. I choose to define 85000 points. You can increase / decrease this value whenever you want



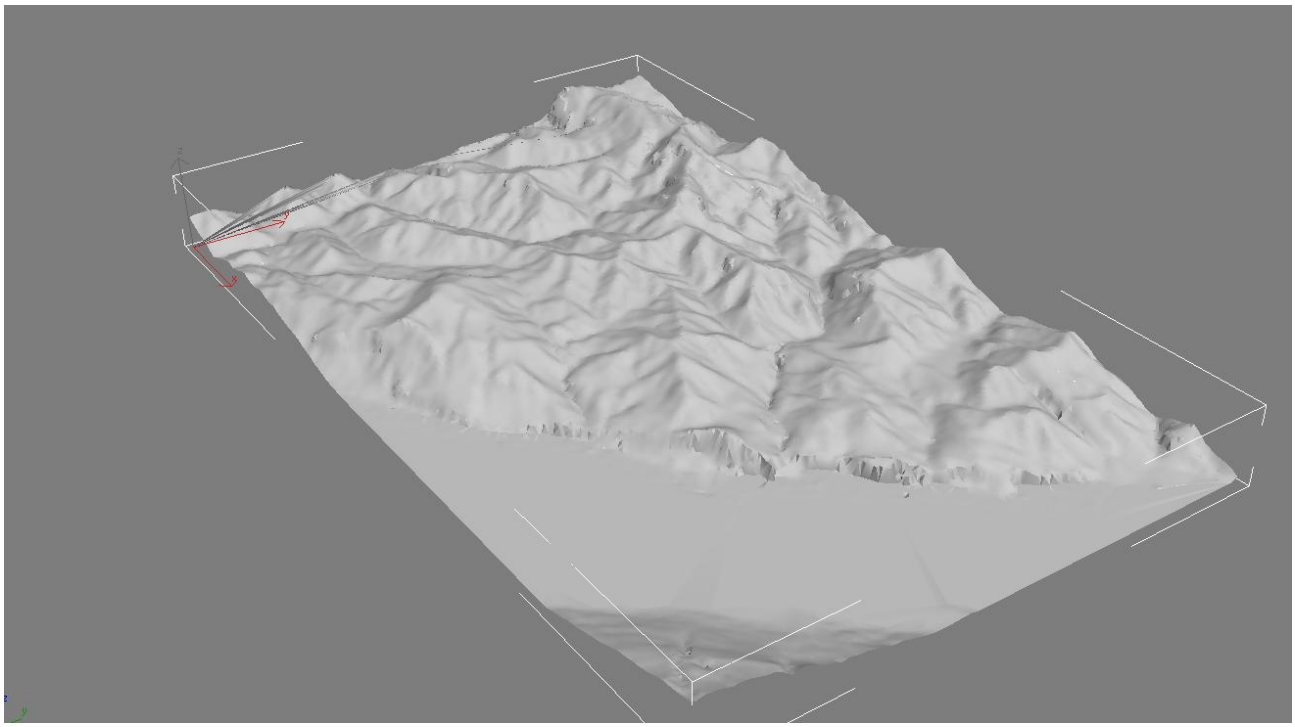
This is the import result:



Save the map as 3ds file. You can elaborate it in a second time with Max.

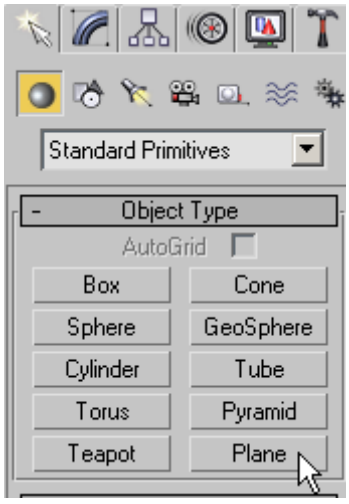

File Edit View Camera Draw Tools Window Help
New Ctrl+N
Open... Ctrl+O
Save Ctrl+S
Save As...
Save A Copy As...
Save As Template...
Revert
Send to LayOut
3D Warehouse
Export
Import...
Print Setup...
Print Preview...
Print... Ctrl+P
Generate Report...
Recent File
Exit
3D Model...
2D Graphic...
Section Slice...
Animation...
Export Model
Salva in: DEM e Superbowl
Documenti recenti
Desktop
Documenti
Risorse del computer
Risorse di rete
tremosine_superbowl_2
tremosine_superbowl_3
tremosine_superbowl_4
tremosine_superbowl_5
tremosine_superbowl_6
Untitled.3ds
Nome file: dem.3ds
Export type: 3DS (*.3ds)
Export
Annulla
Options...
3DS Export Options
Geometry
Export: Single object
Export only current selection
Export two-sided faces
As: Materials
Geometry
Export stand alone edges
Materials
Export texture maps
Favor:
Preserving texture coordinates
Welding vertices
Use "Color By Layer" materials
Cameras
Generate cameras from Pages
Scale
Units: Meters
OK
Cancel

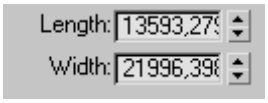
This is the map in Max. Attach all the meshes and apply a material.

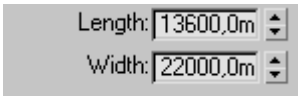


My DEM now is too large as polygons. It is more than 54000 polys. But it will be "not driveable" and used as scenery, so I decide to modify my polygons size (i.e.) in 200 metres x 200 metres. Now I need to use the ***compound objects*** instrument for generating a new map.

Select the ***top view*** and draw a plane object which must be bigger than the map.

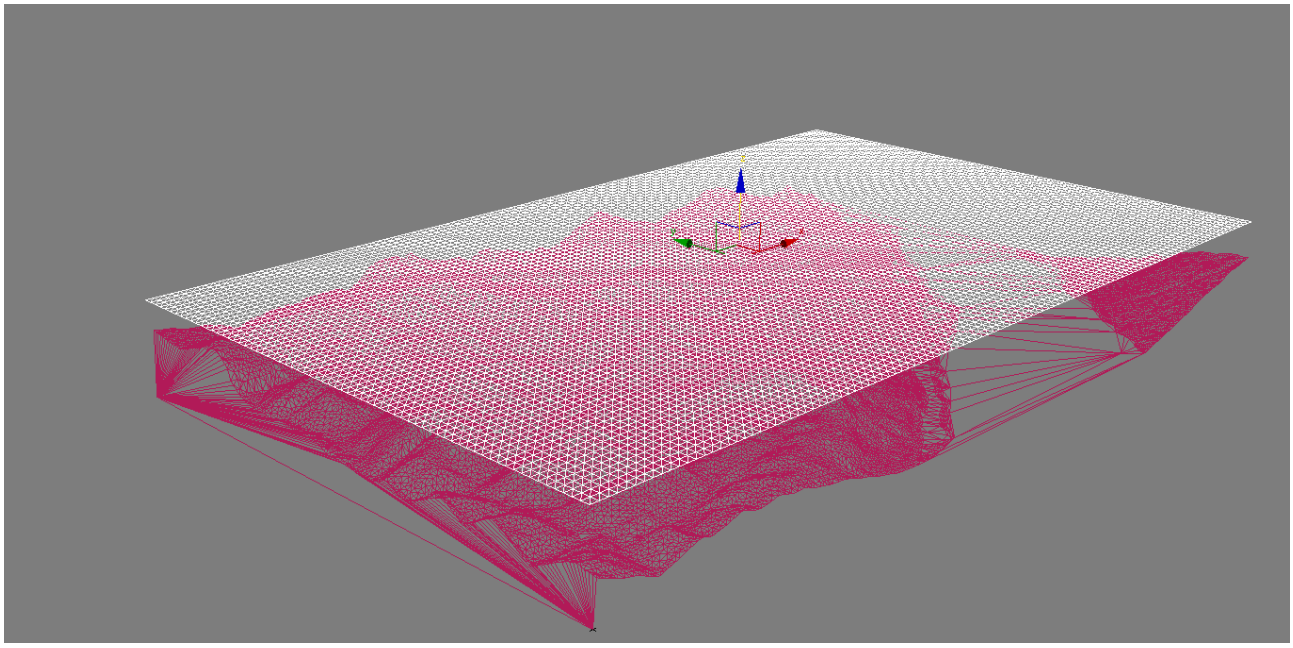


Approximate the measures: 

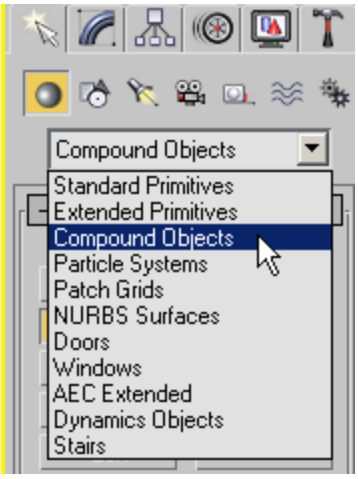
will become 

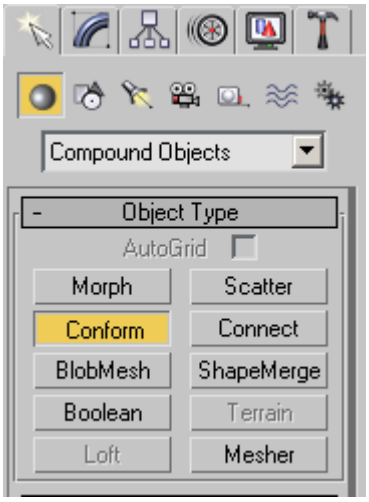
and divide in 200 metres squares:

Be sure that the new plane will be "on top" of the original map, otherwise elevate it:

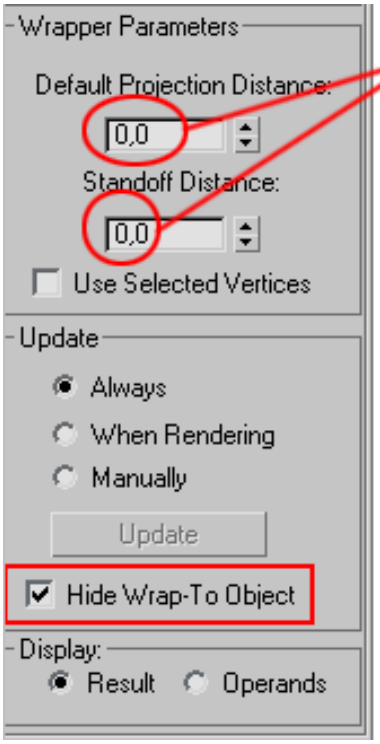


With the plane selected, go back in the ***create*** panel and select from the scrolling list the value ***compound objects***, then ***conform***



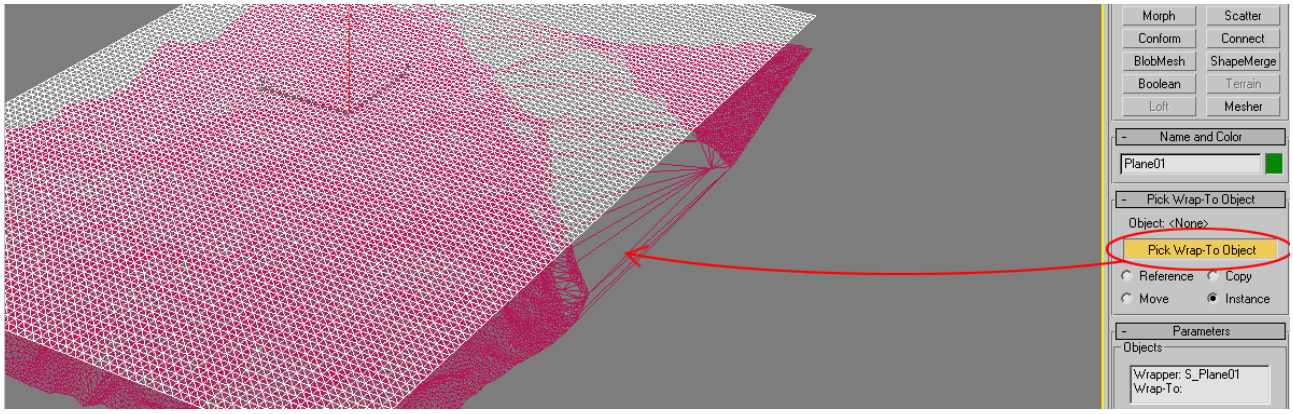


Use these parameters

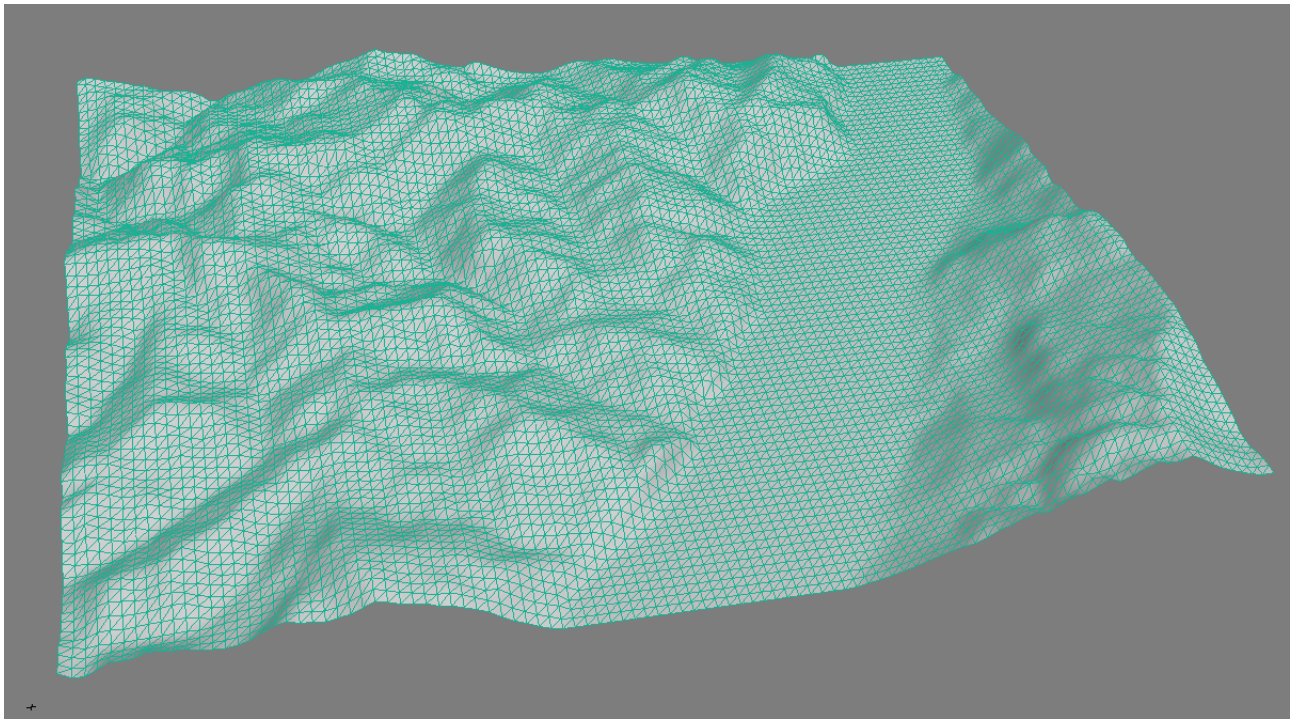


Values are changeable at will. Value 0 is the maximum precision

Once setted the options, back to the top and press the ***pick wrap to object*** button, and select the original map to let the process applying the new plane on it.



This is the result after deleting the original map:



You can freely decide to save it as a .max, or merge it with the track. You can also apply a texture and save as 3ds for using it in a BTB Xpack.