

PREPARING A BOTTOM FRICTION FILE (VARYING IN SPACE) FOR SCHISM USING BLUEKENUE

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Step 1 - Register to download Bluekenue (FREE):

https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/blue_kenue_index.html



The screenshot shows a web browser window displaying the Blue Kenue™ website. The browser's address bar shows the URL https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/blue_kenue_index.html. The website header features the National Research Council Canada logo and a red maple leaf. A navigation menu includes links for Programs and services, Areas of R&D, Research facilities, Publications, Careers, and About NRC. The main content area is titled "Blue Kenue™: Software tool for hydraulic modellers" and includes a "Download Blue Kenue™" link. A sidebar on the left lists various services and opportunities, including "Blue Kenue™: Software tool for hydraulic modellers", "Blue Kenue™ request to download form", "Blue Kenue™ terms and conditions", "Licensing opportunities", and "Industrial Research Assistance Program (IRAP)". The main text describes the software's capabilities for data preparation, analysis, and visualization, mentioning its integration with TELEMAC, ADCIRC, and HydroSim. It also notes that the software provides dynamic 1D, Polar, 2D, 3D, and Spherical views, which can be recorded as digital movies or saved as images. The text concludes by stating that all views and data are fully geo-referenced and coordinate conversion is supported.

File Edit View History Bookmarks Tools Help

Blue Kenue™: Software too... x New Tab x +

https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/blue_kenue_index.html

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Home > Programs and services > Technical and advisory services > Blue Kenue™: Software tool for hydraulic modellers

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Visualization and animation

Blue Kenue™ is an advanced data preparation, analysis, and visualization tool for hydraulic modellers. It provides a state-of-the-art interface, integrating geospatial data with model input and results data. Blue Kenue provides direct import of model results from [TELEMAC](#), [ADCIRC](#) and [HydroSim](#).

Visualization in Blue Kenue™ is provided by dynamic 1D, Polar, 2D, 3D and Spherical views that can be recorded as digital movies or saved as images for inclusion in reports or presentations. 3D flights through the model domain are easily created by defining a few control points and pushing "Play".

All views and data are fully geo-referenced and coordinate conversion between common projections is supported.

Data formats/types

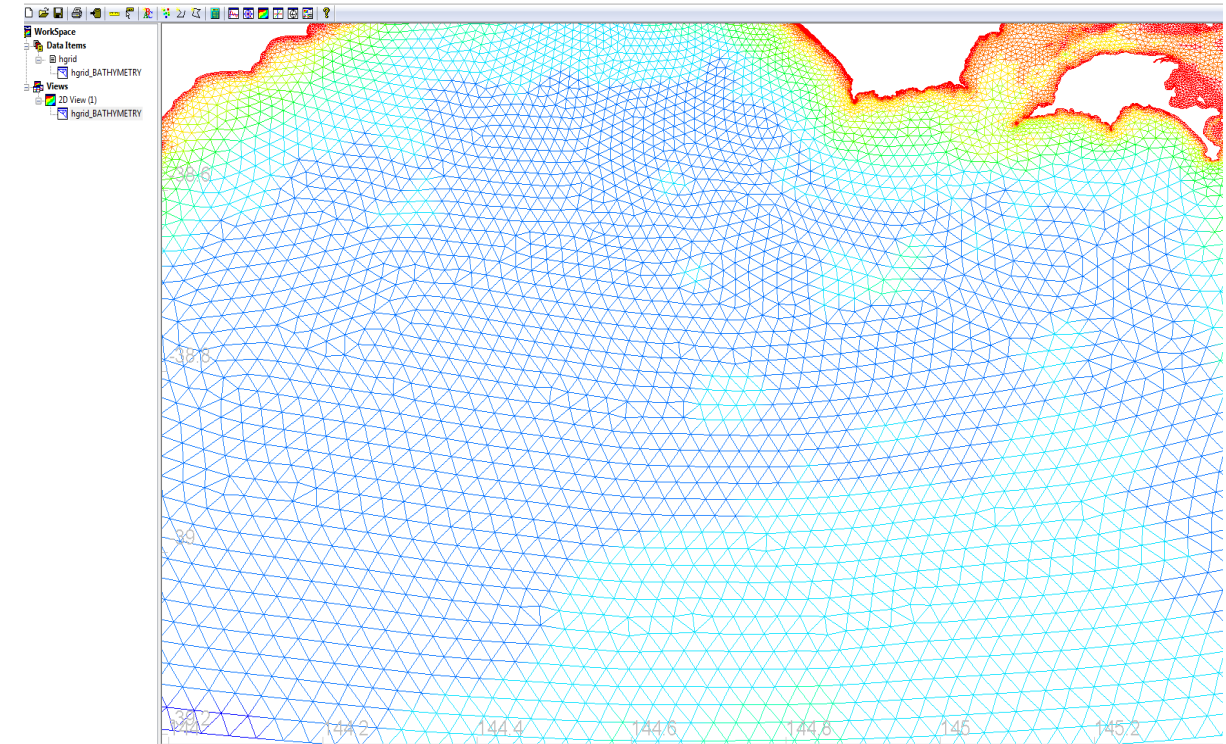
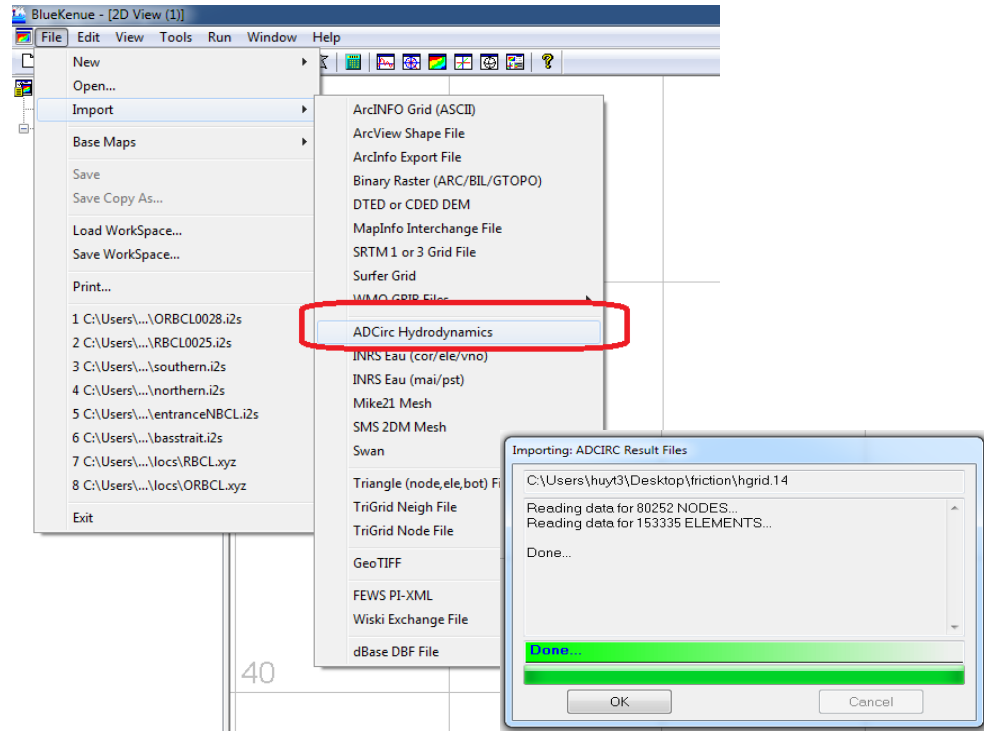
Step 2 - Load SCHISM mesh file:

1. Change the extension: hgrid.gr3 → hgrid.14

2. Load it by Bluekenue:

File → Import → ADCirc Hydrodynamics

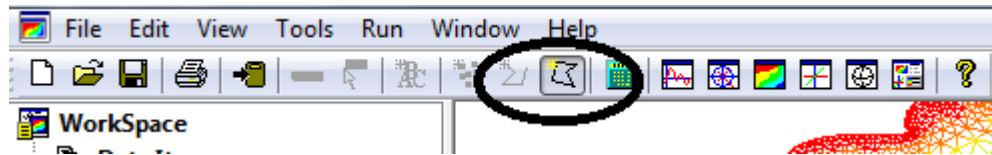
3. Drag grid from **Data Items** to **2D View**



Step 3 - Draw polygons

To define a bottom friction coefficient for a particular area, you can draw a polygon and define a value for it.

To draw a polygon, click on the icon below on the toolbar:



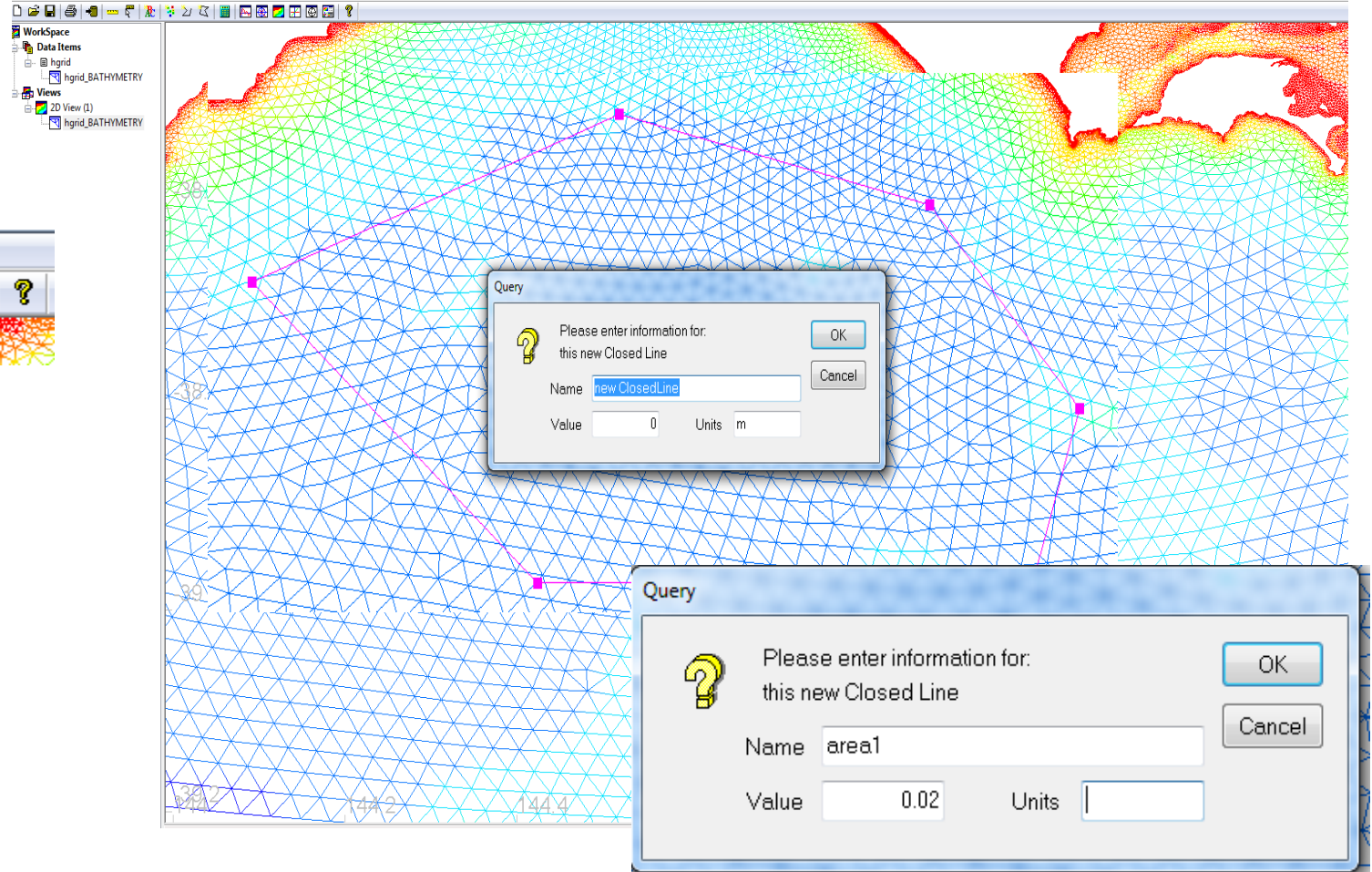
Then press **ESC key** to define name of area and a value for it..

Example:

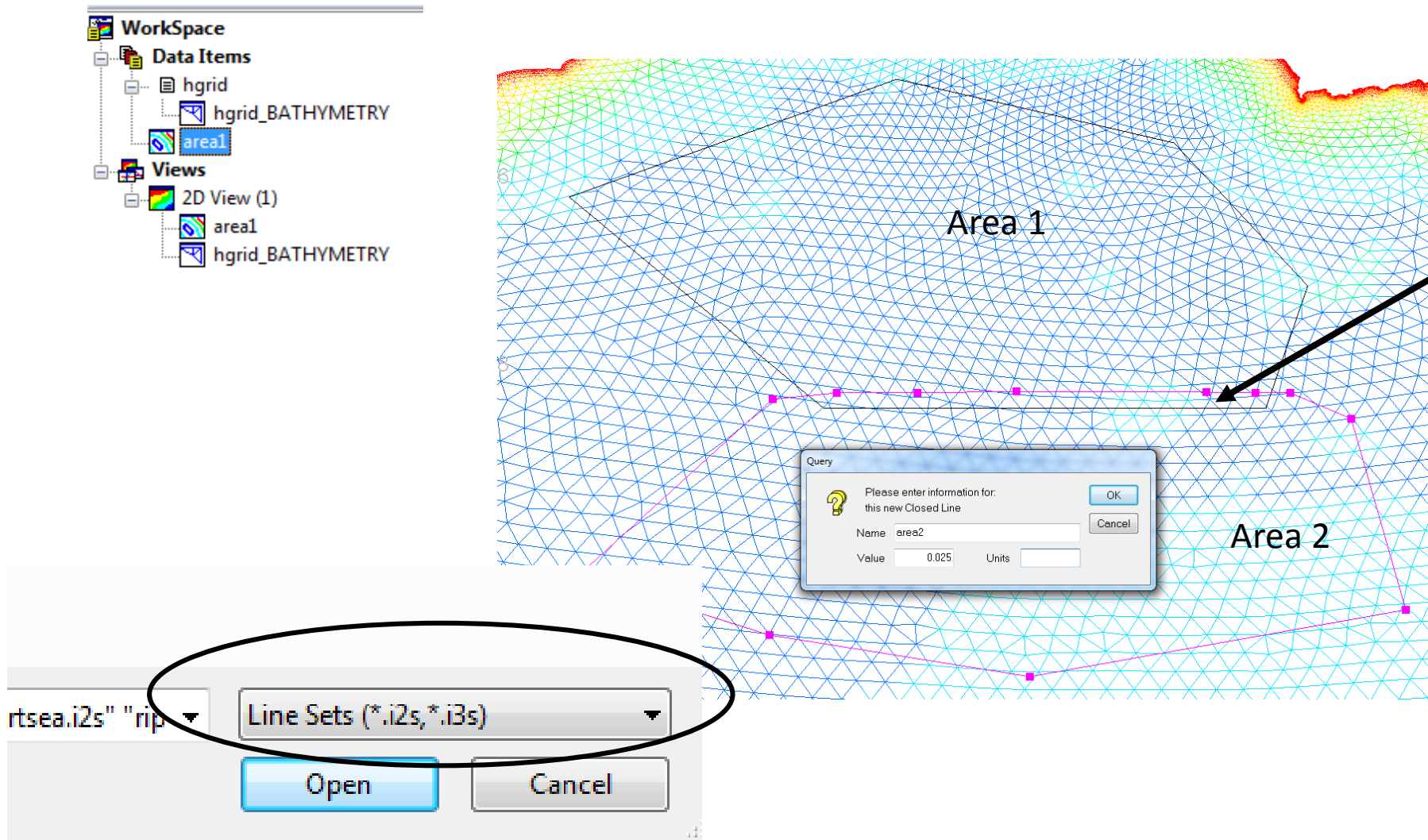
Name: area 1

Value: 0.02 (for Manning)

Units: (blank)



Continue drawing polygons to make sure the entire area of the domain is covered (see previous slide)

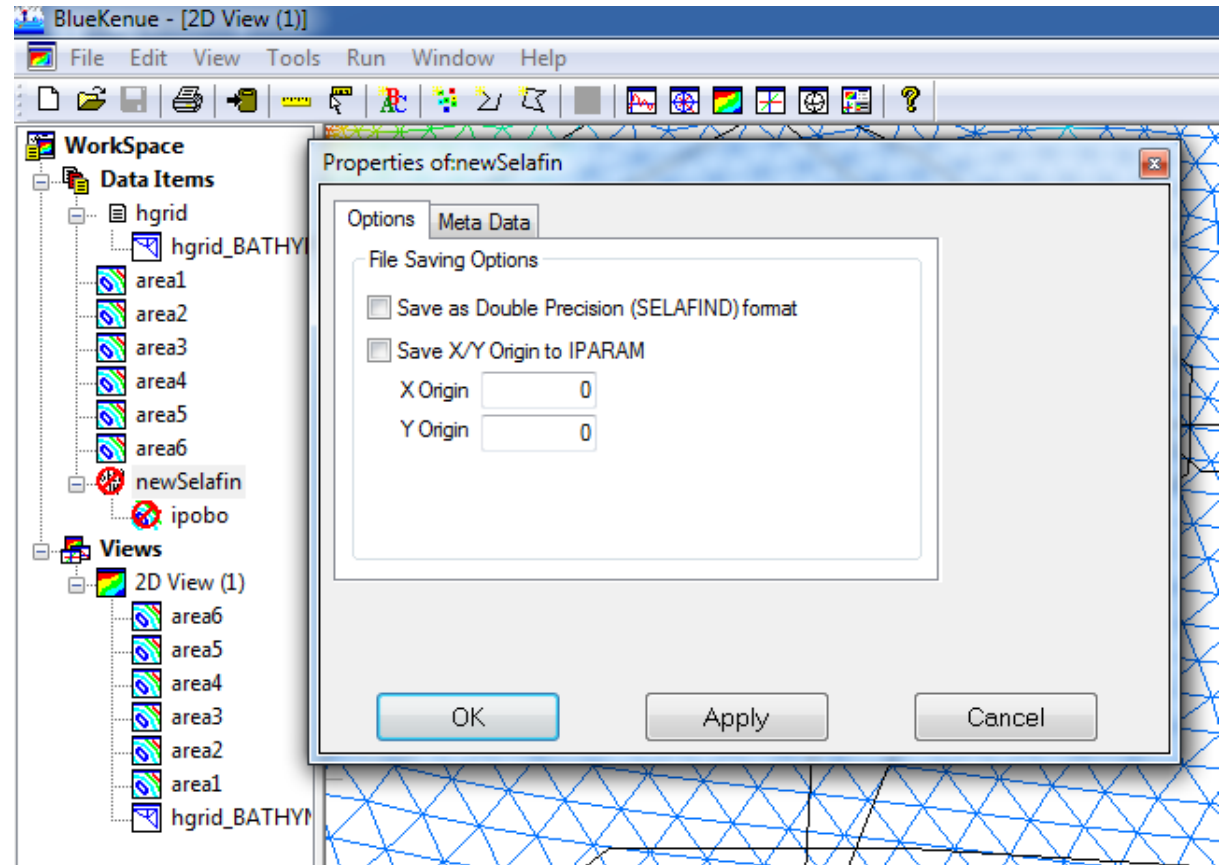
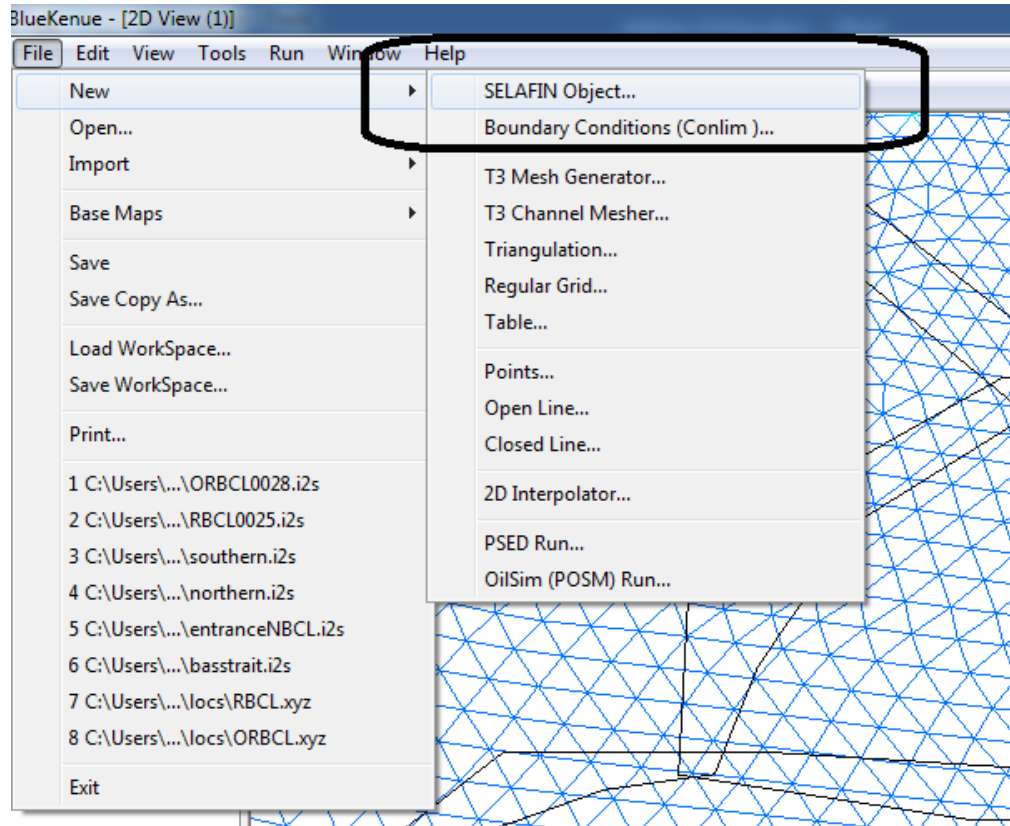


Overlapped area

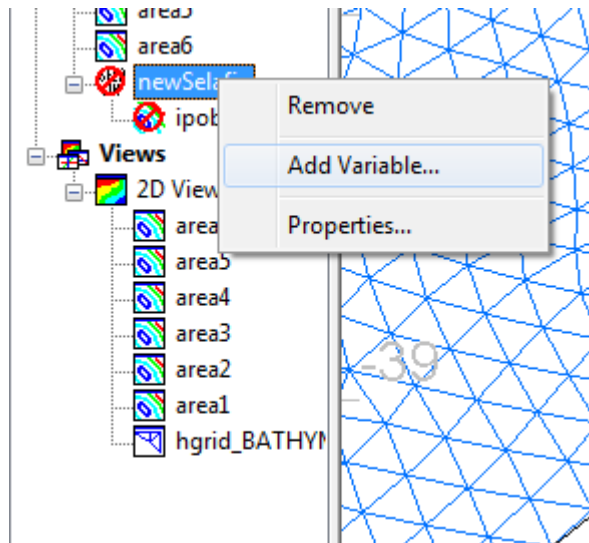
to make sure
nodes between
two areas (or in
the whole
domain) are
defined.

3 - Create a bottom friction file

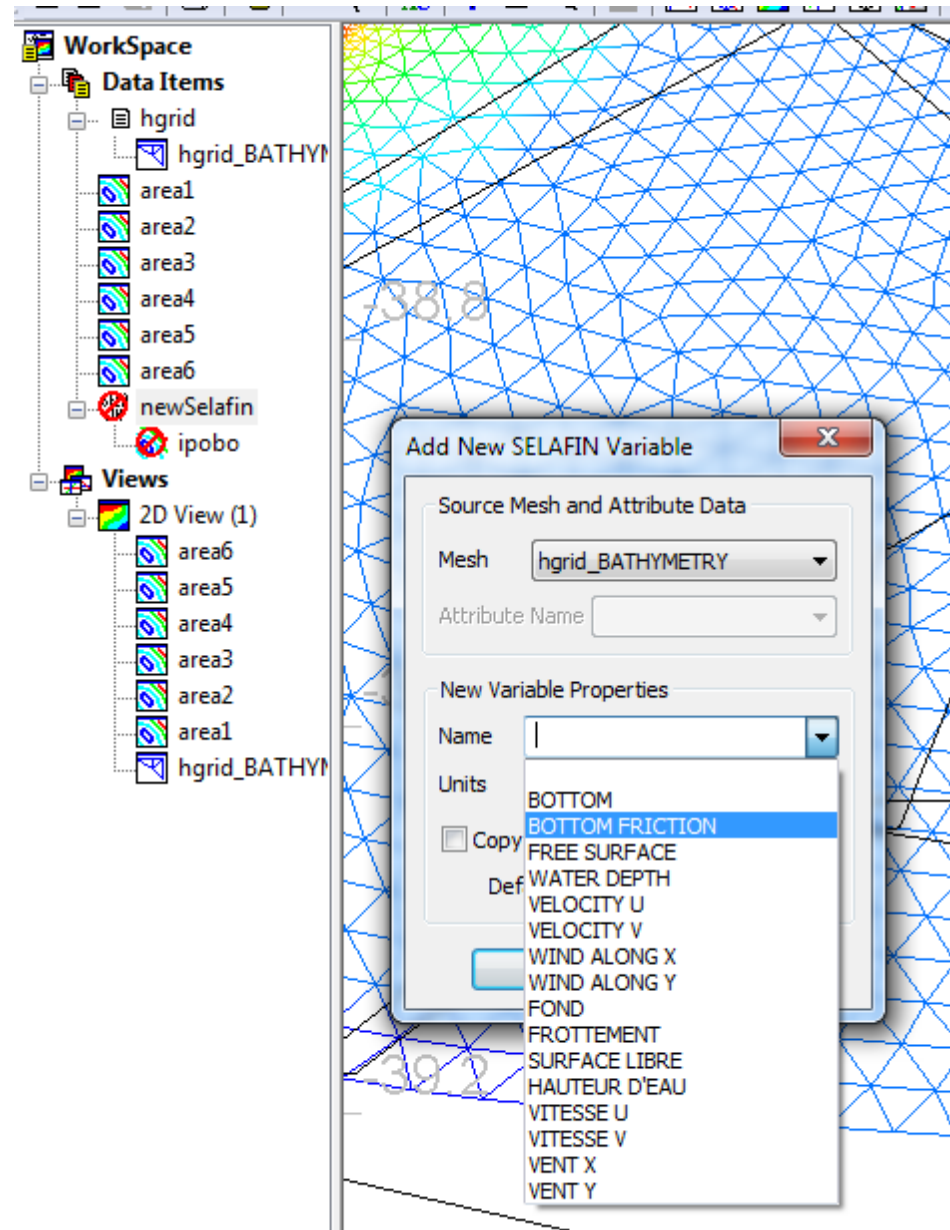
To create a bottom friction file, go to File → SELFADIN Object → Ok



Then click on newSelfin → Add Variable

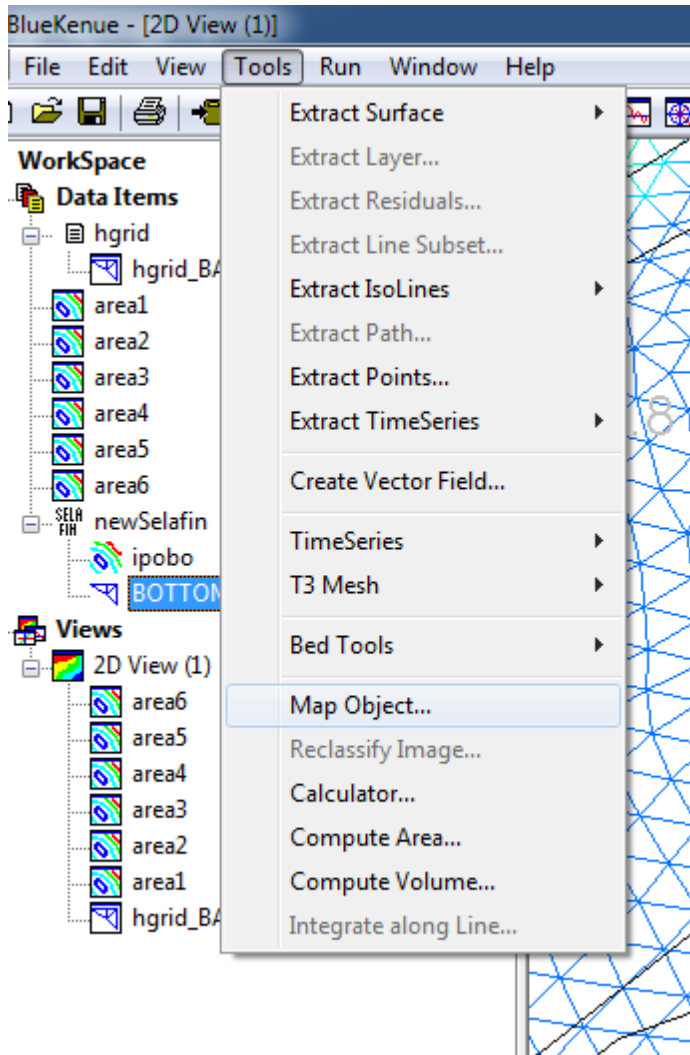


Select BOTTOM FRICTION, then click OK

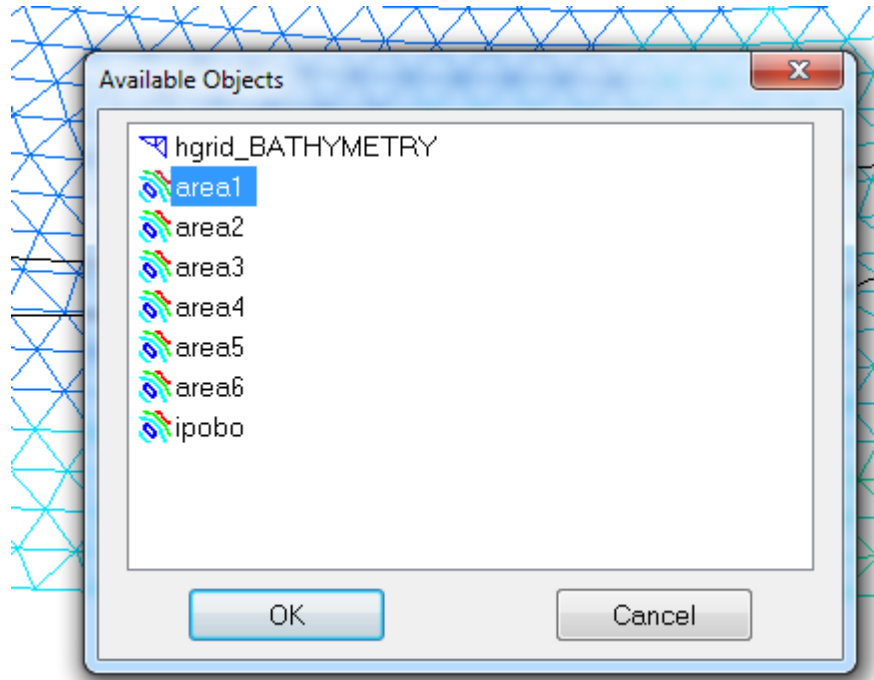


Now you are ready to map the bottom friction coefficient for areas you have defined.

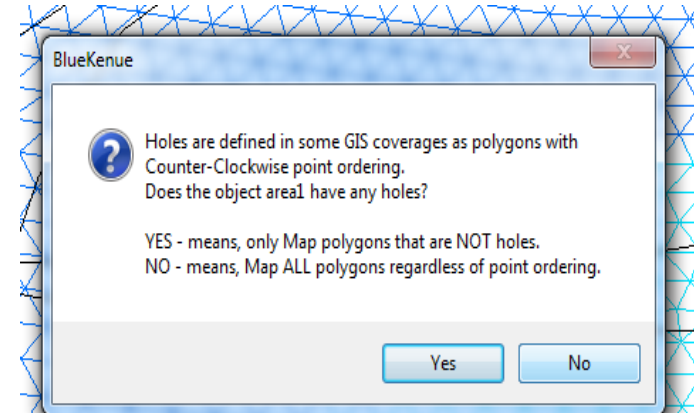
Go to Tool → Map Object



Select a name on the list of defined areas, then click OK

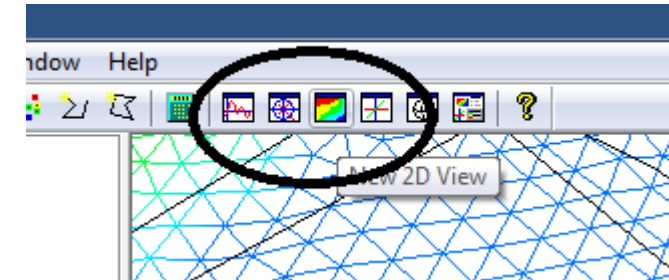


After that, click No



To map another area, click on another name on the list, then click ok, then No

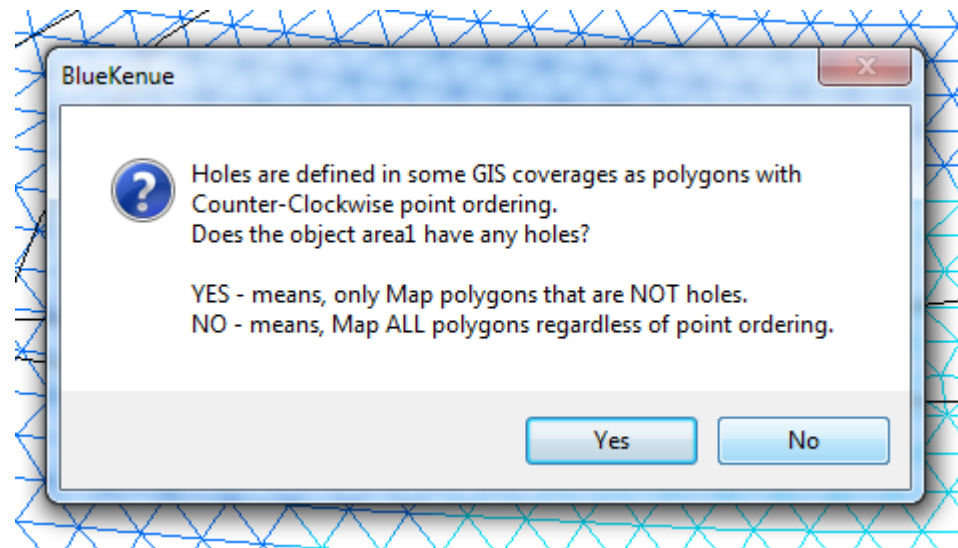
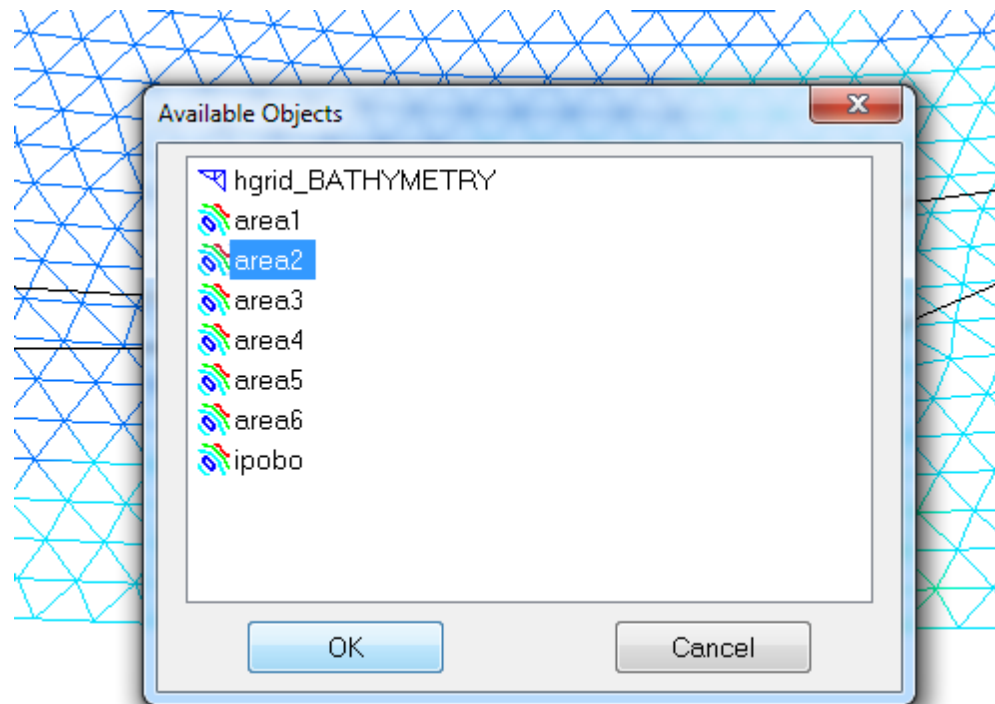
Repeat this until all areas are mapped.



You can view the bottom friction in another window view by click on the icon above.

To map another area, click on another name on the list (e.g. area2) , then click ok, then No

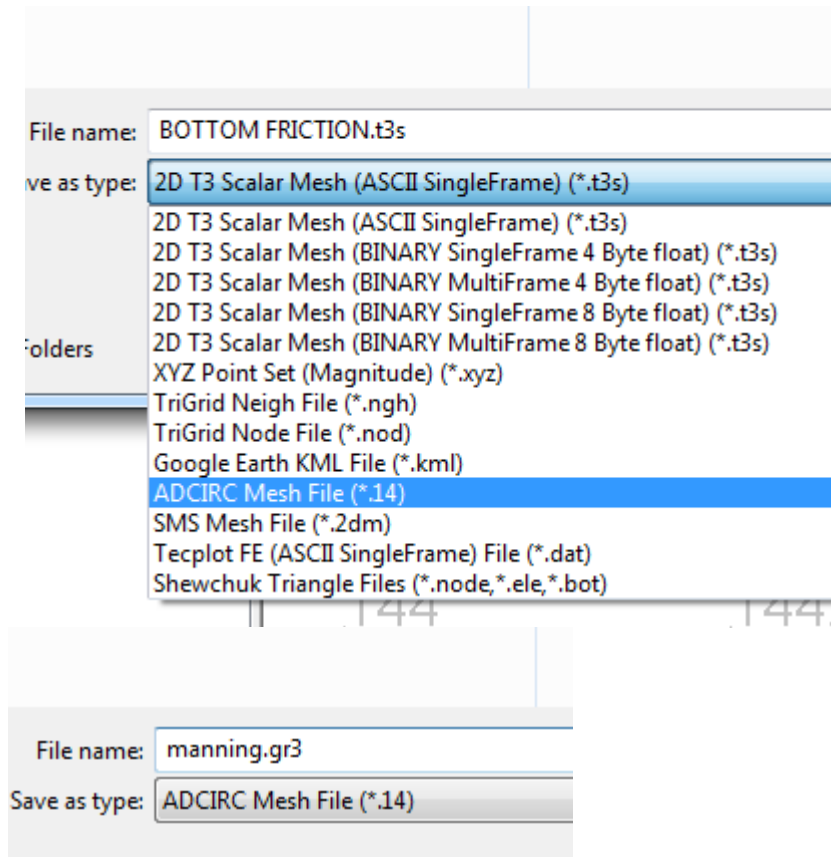
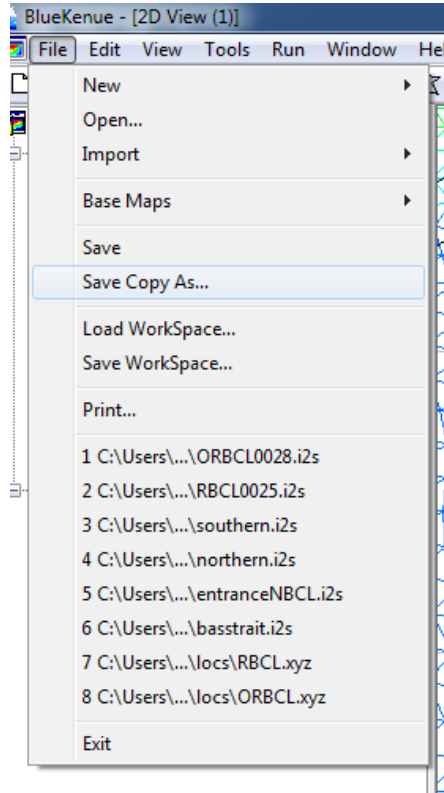
Repeat this until all areas are mapped.



4 - Save a bottom friction file (e.g. Manning.gr3)

Once all areas are mapped, you are ready to save the bottom friction file.

Click on BOTTOM FRICTION, go to File → Save Copy As, select ADCIRC Mesh File, in the File name, type manning.gr3 Then click OK/Save.

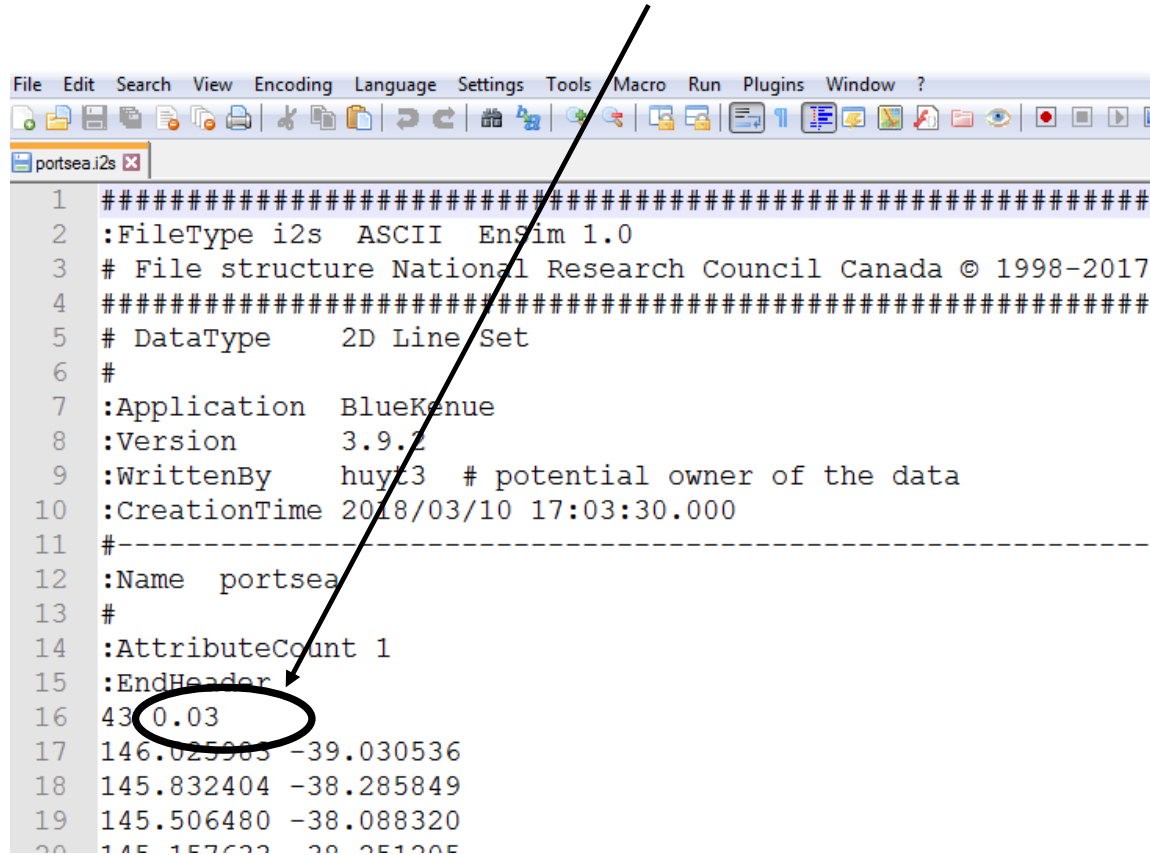


```
C:\Users\huy3\Desktop\friction\New folder\friction.gr3 - Notepad++
Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
manning.gr3
33554 153300 3 80234 80226 80227
33555 153301 3 80226 80233 80228
33556 153302 3 80233 80226 80234
33557 153303 3 80228 80235 80229
33558 153304 3 80233 80235 80228
33559 153305 3 80229 80235 80236
33560 153306 3 80229 80236 80230
33561 153307 3 80230 80237 80231
33562 153308 3 80230 80236 80237
33563 153309 3 80231 80237 80232
33564 153310 3 80232 80237 80238
33565 153311 3 80234 80240 80233
33566 153312 3 80233 80239 80235
33567 153313 3 80240 80239 80233
33568 153314 3 80239 80241 80235
33569 153315 3 80241 80236 80235
33570 153316 3 80242 80237 80236
33571 153317 3 80236 80241 80242
33572 153318 3 80242 80243 80237
33573 153319 3 80238 80237 80243
33574 153320 3 80238 80243 80244
33575 153321 3 80246 80239 80240
33576 153322 3 80245 80241 80239
33577 153323 3 80246 80245 80239
33578 153324 3 80247 80241 80245
33579 153325 3 80247 80242 80241
33580 153326 3 80243 80242 80247
33581 153327 3 80243 80248 80244
33582 153328 3 80248 80243 80247
33583 153329 3 80250 80245 80246
33584 153330 3 80249 80245 80250
33585 153331 3 80249 80247 80245
33586 153332 3 80251 80247 80249
33587 153333 3 80248 80247 80251
33588 153334 3 80252 80249 80250
33589 153335 3 80251 80249 80252
33590 0
33591 0
33592 0
33593 0
33594
```

Note: once the bottom friction file is created, open the file to delete 4 rows (0. 0. 0. 0) at the bottom..

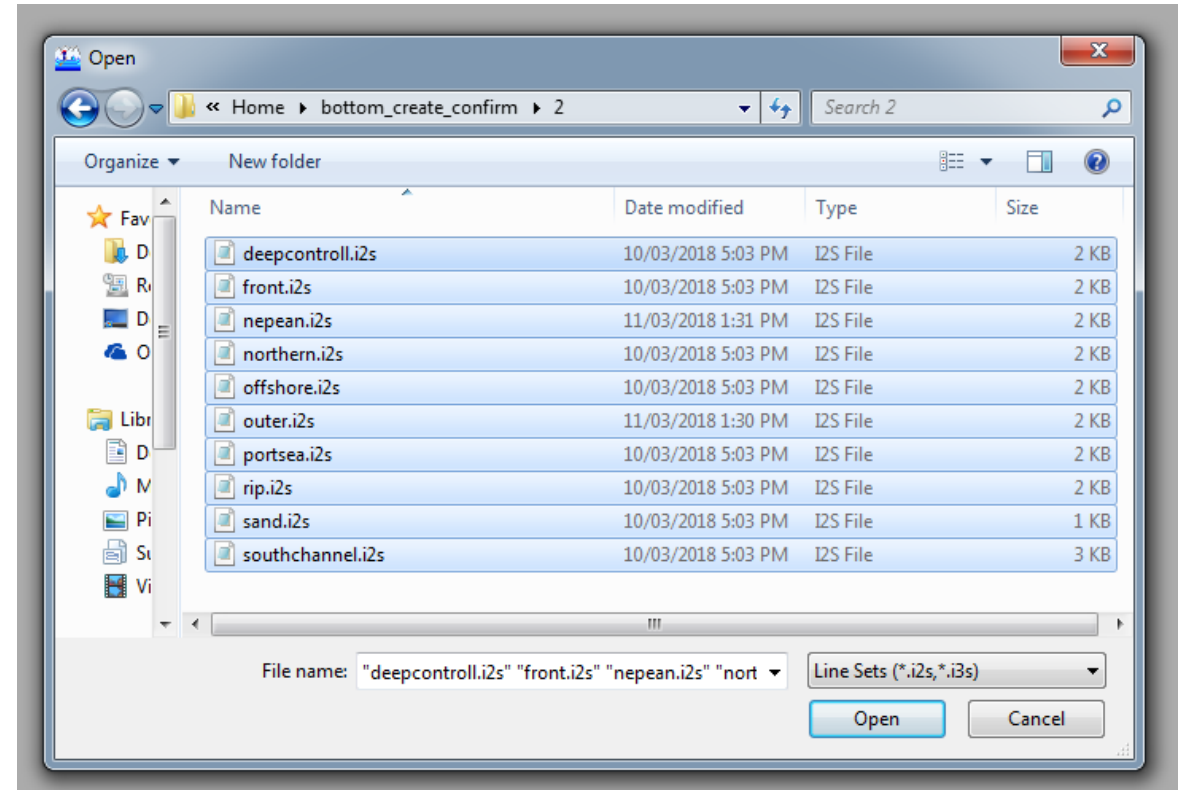
Other tips:

You can easily change the bottom friction coefficient in the polygons using text notepad++.. and save it



```
1 #####
2 :FileType i2s  ASCII  EnSim 1.0
3 # File structure National Research Council Canada © 1998-2017
4 #####
5 # DataType      2D Line Set
6 #
7 :Application  BlueKenue
8 :Version      3.9.2
9 :WrittenBy    huyt3 # potential owner of the data
10 :CreationTime 2018/03/10 17:03:30.000
11 #-----
12 :Name portsea
13 #
14 :AttributeCount 1
15 :EndHeader
16 43 0.03
17 146.025983 -39.030536
18 145.832404 -38.285849
19 145.506480 -38.088320
20 145.157632 -38.051205
```

Then load it again in Bluekenue (e.g. ctrl + A to load all polygons)



REFERENCES

* **Blue Kenue™: Software tool for hydraulic modellers** [\(\[National Research Council Canada\]\(https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/blue_kenue_index.html\)\)](https://www.nrc-cnrc.gc.ca/eng/solutions/advisory/blue_kenue_index.html)

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